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1982 SURVEY OF THE CHECK COLLECTION SYSTEM

by

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CONTENTS

LIST OF TABLES vii

THE CHECK COLLECTION SYSTEM PERFORMANCE STUDY 1

- Background 1
- Survey Distribution 2
- Survey Respondents 2
- 1982 Survey Highlights 2

THE MEASURES OF SYSTEM PERFORMANCE 7

- Reader/Sorter Reject Rates 7
- Transit Returns 10
- Free and Lost Items 16
- Missent, Miscoded, and Listing Error Items 21
- Exception Items Plus Return Items 27
- A Dollar Analysis of Return and Exception Items 32
- Outstanding Exception Items 32
- A Comparison of Balancing Policy and Experience 32
- Transit Holdover 37

BANK LABOR PRODUCTIVITY MEASUREMENT 41

- Labor Intensiveness 41
- Labor Distribution 44
- Data Control — Balancing and Correction 46
- Encoding Operations 47
- Check Receiving Operations 51
- Reader/Sorter Operations 52
- Cash Letter Make-Up and Microfilming 53
- On-Us Processing — Labor Productivity 57
- Bulk Filing Labor 57
- Exception and Return Item Processing 61
- Automated Reject Processing Productivity 66
- Labor Productivity Summary 67

PERFORMANCE MEASUREMENT STATISTICS 69

- Reject Reentry 69
- Automated Reject Processing 76
- Miscellaneous Statistics 78

CHECK TRUNCATION 85

REJECT PROCESSING COSTS 89

APPENDICES

- Appendix A — 1982 Survey Questionnaire 91
- Appendix B — Banker Comments 109

LIST OF TABLES

1	Survey Respondents by Geographic Area	3
2	Percent of Rejects on Reader/Sorter Equipment by Area	8
3	Distribution of the Reject Rate	9
4	Percent of First-Pass Rejects by Type and by Area	11
5	Transit Returns by Area	13
6	Distribution of the Transit Return Rate	14
7	Transit Return Dollar Value by Rate of Transit Returns	15
8	Free and Lost Items Discovered by Area	17
9	Free Items Discovered by Area	18
10	Lost Items Discovered by Area	19
11	Distribution of the Free and Lost Items Rate	20
12	Missent, Miscoded, and Listing Error Items Discovered by Area	22
13	Missent Items Discovered by Area	23
14	Miscoded Items Discovered by Area	24
15	Listing Error Items Discovered by Area	25
16	Distribution of Missent, Miscoded, and Listing Error Items Rate	26
17	Exception and Return Items Discovered by Area	28
18	Distribution of the Exception and Return Items Rate	29
19	Percent of Exceptions, Returns, and Rejects to the Number of Items Processed	30
20	Distribution of Exceptions, Returns, and Reject Rate	31
21	Return and Exception Item Dollar Analysis by Area	33
22	Age Distribution of Outstanding Exception Items	34
23	Age Distribution of Outstanding Exception Items by the Microfilming Method	35
24	A Comparison of Balancing Policy and Experience	36

25 Transit Holdover by Area 38

26 Distribution of the Transit Holdover Rate 39

27 Overall Labor Productivity 42

28 Overall Labor Productivity by Area 43

29 Distribution of Labor by Overall Labor Productivity 45

30 Balancing and Correction Labor Productivity 46

31 Encoding Labor Productivity 47

32 Encoding Labor Productivity for the Single-Pocket Machine 48

33 Encoding Labor Productivity for the Multipocket Machine 49

34 Items Encoded per Man-Hour by Percent of Pre-encoded Items 50

35 Check Receiving Productivity 51

36 Reader/Sorter Labor Productivity 52

37 Cash Letter Make-Up and Microfilming Labor Productivity 54

38 Cash Letter Make-Up Labor Productivity 55

39 Microfilming Labor Productivity 56

40 On-Us Processing Labor Productivity 58

41 Percent of On-Us Items Received and On-Us Processing Labor Productivity 59

42 Bulk Filing Labor Productivity 60

43 Exception and Return Item Productivity 62

44 Return Item Productivity 63

45 Exception and Return Item Productivity by Rate Discovered 64

46 Exception Item Productivity 65

47 Reject Processing Productivity by Area 66

48 Reject Processing Productivity 67

49 Reject Rate After Reader/Sorter High-Speed Reject Reentry by Area 70

50 Distribution of the Reject Rate After High-Speed Reject Reentry 71

51 Average Number of Rejects Reentered from the First-Pass by Area 72

52 Average Number of Rejects Reentered from Subsequent Passes by Area 73

53 Reject Reentry Productivity by Area 74

54 Reject Reentry Productivity 75

55 Automated Reject Processing 77

56 Percent of Automated Reject Processing by Area 79

57 Distribution of the Automated Reject Processing Rate 80

58 Percent of Incoming Items Encoded 81

59 Percent of Supervisory Time to Clerical Man-Hours 82

60 Percent of On-Us Items 83

61 Percent of Payable-Through Drafts 84

62 Forms of Check Truncation 86

63 Reject Processing Costs 89

THE CHECK COLLECTION SYSTEM PERFORMANCE STUDY

Banking's check collection system continues as our nation's primary payment system for handling transaction volume. This system, while using relatively specialized check handling equipment, is still labor intensive in many of its related sub-operations. Although the interbank check exchange is often called the check collection system, it is, in reality, a loosely organized coordinated system. The procedures for control, crediting, security, and sorting are partially controlled by the Federal Reserve System and the Uniform Commercial Code and partially based on agreements between banks through correspondent banking relationships or clearing house arrangements.

The latest survey results indicate that each check is processed by an average of 2.4 financial institutions. Differences in competitive levels, as well as other factors, have caused significant differences in the resources, the productive capacity, and the quality of the various check processing operations in the commercial banking industry. Since each bank is responsible to its management for its own check processing operation, there is no central control responsible for total system performance. Yet, each bank would suffer if the check exchange process were to falter, because the entire system is based upon total cooperation and strict adherence to procedure by the participants.

Since overall system performance varies over time due to changes in regulation, check volume, the labor market, technological development of systems and equipment, and transportation requirements, up-to-date information is necessary to enable each bank to compare its experiences with its peers.

To maintain the effectiveness of the check collection system, it is essential that defects be remedied before they become serious. Thus, it is through the cooperative efforts of bankers that these data are collected. In the assessment of the impacts of the various trends, the entire industry is provided with a measure of performance for the payment system that carries the heaviest transaction load.

Background

In 1970, Arthur D. Little, Inc. (ADL), under the auspices of the Operations and Technology Task Force of the Monetary and Payments System (MAPS) of the American Bankers Association, collected and published data relative to the performance of banking's check collection system.* The data were used as a basis for evaluating the adequacy of the check collection system from a comparison with similar data in future years. Therefore, ADL recommended a periodic collection of check volume data. The Atlanta Federal Reserve Bank Check Study, a project co-sponsored by ABA, BAI, and the Federal Reserve System, represents follow-up research on the nation's check processing volume, as it existed when the data were collected in June, 1979.

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*The Outlook for the Nation's Check Payment System: 1970-1980, Arthur D. Little, Inc. Cambridge, Massachusetts, December, 1970.

Meanwhile, Bank Administration Institute has continued to conduct annual performance measurement surveys of the nation's check collection system. Since 1971, an annual survey has been conducted to collect data that would provide bankers with a measure of industry system fails and a general set of measures for their own check processing operation. The results of each survey also were published by the Institute.

This report, the twelfth in BAI's continuing program of monitoring the performance of banking's check collection system, analyzes the system's performance for 1979 through 1982. Survey data for 1971 through 1978 may be found in previous reports.

Survey Distribution

In October, 1982, 230 commercial banks ($250 million or more in resources) received a BAI Check Collection Performance Measurement Survey questionnaire. All 52 banks that had participated in the original ADL/MAPS study were included. Several banks that had been unable to participate in previous years were included in the survey distribution for 1982, while a few contributing institutions from previous years were unable to provide data this year. Participating banks collected data for the week of November 15-19, 1982.

Survey Respondents

The total number of survey respondents is shown in Table 1. Of the total number of banks surveyed, 74% responded. The response rate was 73% among the banks that had participated in the ADL survey. The 1982 data represent 566 million checks processed, including 298 million transit checks and 268 million on-us checks. These data were analyzed to determine overall check collection performance related to past measurements and manpower utilization by check processing tasks.

Appendix A consists of the 1982 survey form. Appendix B summarizes many of the comments on check collection and processing operations that were submitted by bankers who participated in the 1982 BAI survey.

1982 Survey Highlights

The highlights of the 1982 survey reveal the following changes from the previous year:

- The average reject rate dropped for the third consecutive year. This percentage was reduced from 1.7% in 1981 to 1.5% in 1982.

- Transit return items discovered: The average rate increased slightly from 910.1 items per 100,000 transit items sent in 1981 to 936.1 items in 1982. The average rate had been 1,207.1 in the 1979 survey period.

- Free and lost items discovered: The average rate discovered decreased 22.3% from 18.8 items per 100,000 incoming items in 1981 to 14.6 items in 1982.

Table 1

Survey Respondents by Geographic Area

Area*	ADL Survey Banks				All Reporting Banks+			
	1979	1980	1981	1982	1979	1980	1981	1982
Boston	1	3	2	2	9	12	10	11
New York	5	4	4	4	17	17	14	16
Philadelphia	1	2	3	2	22	24	18	16
Pittsburgh	1	3	3	4	5	5	5	5
Washington, D.C.	1	1	2	1	7	9	9	8
Atlanta	2	1	2	2	19	21	18	25
Chicago	3	5	3	4	8	11	12	12
Cleveland	3	3	3	3	11	11	13	11
Detroit	1	2	1	2	8	9	9	8
Minneapolis/St. Paul	0	0	1	1	0	0	5	4
St. Louis	2	3	1	3	9	10	11	12
Dallas	2	3	2	3	4	6	7	7
Houston	2	2	2	1	9	8	5	9
Los Angeles	1	1	0	2	9	10	7	10
San Francisco	2	1	2	2	11	11	9	11
Denver	2	2	2	2	5	5	5	5
Total banks	30	36	33	38	153	170	157	170

*The Outlook for the Nation's Check Payment System: 1970-1980, Arthur D. Little, Inc., Cambridge, Massachusetts, December, 1970.

+The non-ADL banks are not necessarily located in the cities surveyed by ADL. For the sake of consistency, however, their data are included in a regional area that has as its center the city studied in this survey. All reporting banks include the data from the ADL banks.

- Missent, miscoded, and listing error items discovered: The average rate discovered decreased 16.3% from 16.6 items per 100,000 transit items sent in 1981 to 13.9 items in 1982.

- Transit holdover: The average rate increased slightly from 1.4% of transit items processed in 1981, to an average rate of 1.6% in 1982. This figure was 9.4% in 1973. The average dollar amount of each item held over dropped significantly from $781 reported in 1981 to the lowest average dollar level reported for transit holdover — $408.

- The resolution time for outstanding exception items increased slightly — 76.3% of all 1982 exception items were more than one month old compared with 1981 when 70.9% were more than one month old. However, excellent progress has been made in reducing outstanding exception dollars. The 1981 survey showed 38.8% of exception item dollars were more than one month old, while in 1982 those dollars were reduced by 37.9% to 24.1%

- Overall labor productivity, measured in checks processed per man-hour, improved significantly in 1982. Average productivity rose to 693.3 items, a 25.7% increase from 1981's average of 551.6 items. The median rate increased to 692.6 items per man-hour, 13.6% more than the 609.8 items in 1981.

- Check truncation activity, measured for the first time in the 1981 survey, showed modest growth in one year. Although the average number of items that paying banks do not return to their customers, rose by 73.8%, the dollar volume represented by those items increased by only 18.4%.

The efficiency of most check processing operations improved for a third consecutive year. Several elements — including the economic recession — contributed to this improvement. Item processing managers have been working to reduce the traditionally high turnover rate in check processing positions through improved salaries, better training, incentive programs, and quality circles. At the same time, fewer jobs have been available, so people have been staying at their jobs longer and improving their performance. The end result for banks was a significant increase in productivity. The survey revealed that fewer errors occurred in check processing operations in 1982, another indication of improved job performance. Survey findings also showed the increased emphasis on the timely processing of high dollar checks, as suggested by the significant reduction both in the average dollar volume of transit holdover and in the percentage of exception item dollars more than one month old.

The challenge of the future is how to manage the check processing operation during a period of inevitable change. Many banks began to experience reduced check clearing volumes in the spring of 1983, as a result of competitive programs initiated by the Federal Reserve System.

Even if some of this volume were to be regained, new research by the Federal Reserve Bank of Atlanta indicates that national check writing volume will peak by the mid-1980s. As the transition to electronic payment systems continues to accelerate, the strategic plan for check processing must be governed by productivity, automation, and creativity if profitable operations are to be conducted.

THE MEASURES OF SYSTEM PERFORMANCE

The primary purpose of the BAI survey is to monitor the industry's check collection system performance. The system's performance can be measured in several ways: cost, speed, or the frequency of error. Although there may be many different ideas concerning what constitutes a system failure or an error, the survey and its succeeding analysis considered the following items to be representative of defects in the system's operation:

- Reject rates.
- Transit returns.
- Free or lost items.
- Missent, miscoded, and listing errors.
- Transit holdover.

Because banks use various definitions and data collection methods, the data presented on system failures have validity only when compared with data collected in the same manner.

Only minor modifications were made in the 1982 survey questionnaire. These changes did not appear to affect the collected data and were comparable to the previous survey data. If the responding banks collected the data in the same manner, the 1982 survey results will identify the changes that have occurred in the past year. All performance analyses for each subject are presented together.

The formulas used in the calculation for each table are given to assist bankers in making their own comparisons. A number of respondents could not answer every question in the survey because of the internal systems in their banks. Consequently, only those banks that furnished valid answers to all questions pertaining to a given formula were considered in the calculations. This accounts for the varying number of respondents in the different tables.

Reader/Sorter Reject Rates

Definition: Percentage of items rejected for any reason by a MICR reader/sorter.

As shown in Table 2, the calculated average reject rate was reduced from 1.7% experienced in 1981 to a 1.5% rate in 1982.

An examination of the results for all banks revealed that 11 areas experienced a reduction in the reject rate, ranging from 0.1% to 0.9%, while only three areas had an increased reject rate, in each case, of only 0.1%. The New York and Houston banks made significant progress, which is indicative of the attention that is being given to reject rates by the major city clearinghouses.

A review of Table 3, indicates that many banks continue to make commitments to reducing their prime pass reject rates. The number of banks in the reject rate category, 1.0 - 1.5%, increased by 52% from 1981.

Table 2

Percent of Rejects on Reader/Sorter Equipment by Area

	ADL Banks				All Banks			
Area	1979	1980	1981	1982	1979	1980	1981	1982
Boston	2.3%	2.3%	2.0%	2.2%	2.4%	2.1%	2.0%	1.6%
New York	2.4	2.6	2.7	2.0	2.4	2.2	2.7	1.8
Philadelphia	1.1	1.1	1.7	1.5	1.9	1.9	2.3	2.1
Pittsburgh	1.4	1.1	1.6	1.4	1.9	1.8	1.9	1.4
Washington, D.C.	1.0	*	0.8	1.3	1.9	2.1	1.4	1.5
Atlanta	1.9	2.8	1.5	1.9	2.1	1.9	1.6	1.7
Chicago	2.6	1.4	1.7	1.6	2.1	1.7	1.8	1.8
Cleveland	1.7	1.9	1.9	1.7	2.2	1.9	1.8	1.7
Detroit	1.6	2.2	1.9	1.4	2.5	1.8	1.5	1.5
Minneapolis/St. Paul	*	*	1.3	0.9	*	*	1.8	1.2
St. Louis	1.4	1.8	1.0	1.0	2.0	2.0	1.7	1.4
Dallas	3.0	2.2	2.4	1.7	2.4	1.8	2.2	1.7
Houston	2.2	2.0	1.3	1.4	2.2	2.1	2.7	1.8
Los Angeles	1.7	2.3	*	1.8	2.1	2.0	1.5	1.6
San Francisco	1.5	2.0	1.5	1.1	2.3	1.6	1.7	1.1
Denver	1.7	1.9	1.6	1.2	1.7	1.7	1.8	1.2
Total banks	30	33	33	38	152	158	153	163
Average	1.9%	1.9%	1.6%	1.4%	2.1%	1.9%	1.7%	1.5%

*No respondents.

$\frac{Q30}{Q7} \times 100$

Table 3

Distribution of the Reject Rate

	ADL Banks				All Banks			
Reject Rate	1979	1980	1981	1982	1979	1980	1981	1982
0% - 1.0%	1	3	2	4	6	10	17	18
1.0% - 1.5%	9	5	10	14	26	38	40	61
1.5% - 2.0%	9	8	12	14	47	40	48	47
2.0% - 2.5%	4	13	4	6	33	38	21	26
2.5% - 3.0%	5	4	1	0	21	21	11	5
3.0% - 3.5%	1	0	4	0	7	11	9	2
3.5% - 4.0%	0	0	0	0	7	0	3	2
Over 4.0%	1	0	0	0	5	0	4	2
Total banks	30	33	33	38	152	158	153	163
Average	1.9	1.9	1.6	1.4	2.1	1.9	1.7	1.5
Median	1.8	2.0	1.7	1.5	2.0	1.8	1.7	1.5

$\frac{Q30}{Q7} \times 100$

At the other end of the spectrum, the total number of banks in the last four categories decreased by 59% from 1981, as the median reject rate also improved to 1.5% in 1982.

Of the 139 banks that were able to present a more refined breakdown of first-pass rejects by type (Table 4), on the average:

- 15.3% were due to errors in the transit/routing number.
- 16.0% were due to errors in the account number.
- 34.0% were due to errors in the dollar amount.
- 5.0% were due to errors in the serial number.
- 6.8% were due to errors in the trancode.
- 23.0 were due other reasons, either unknown or multiple fields.

In summary, an improving average reject rate demonstrates banking industry concern for MICR quality control techniques. However, room for improvement does exist. For instance, as the installations continue of automated reject processing equipment which re-encodes the MICR line, intermediate banks in a check's processing cycle will experience reduced reject rates if full-field repair has been accomplished. While technology is available to effect greater reductions in reject rates, cooperation among banks is required. Similarly, banks must work to decrease the percentage of rejects caused by errors in the dollar amount field. A monitoring program should be initiated with the banks' own encoding machines, including those located in lockbox, and extended to customers who forward large volumes of pre-encoded work. Check processing departments equipped with multipocket proof machines that have on-line reject reentry capabilities must be particularly alert that they are not merely passing rejects on to the next processing institution.

A comparison of consolidated figures by major geographic sections of the country is shown below:

Consolidated Reject Rates

Section	1979	1980	1981	1982
6 Eastern Areas	2.1%	2.0%	2.0%	1.7%
7 Midwestern Areas	2.2%	1.9%	1.9%	1.6%
3 Western Areas	2.0%	1.8%	1.7%	1.3%

Transit Returns

Definition: Items returned today for any reason that were originally sent out as transit items from this bank.

Table 4
Percent of First-Pass Rejects by Type and by Area

Area	Transit Number*				Account Number+				Dollar Amount≠				Serial Number-			
	1979	1980	1981	1982	1979	1980	1981	1982	1979	1980	1981	1982	1979**	1980**	1981**	1982
Boston	27%	21%	14%	16%	19%	20%	20%	15%	44%	45%	40%	45%			4%	4%
New York	19	19	14	16	19	15	15	16	40	39	30	33			3	3
Philadelphia	14	14	11	14	18	22	16	17	42	35	34	28			5	5
Pittsburgh	20	17	11	9	20	16	20	20	38	37	28	23			5	3
Washington, D.C.	29	27	13	20	19	15	21	19	40	34	23	28			3	3
Atlanta	20	16	19	19	21	17	20	15	35	40	33	32			6	4
Chicago	23	21	23	19	12	14	13	14	44	40	41	39			4	5
Cleveland	18	18	18	13	19	21	18	22	39	40	39	43			5	5
Detroit	18	18	18	9	22	17	20	19	35	45	35	32			3	4
Minneapolis/ St. Paul	*	*	17	14	*	*	13	11	*	*	31	46			2	3
St. Louis	16	18	16	19	9	10	10	12	47	47	41	37			4	3
Dallas	25	16	27	23	25	13	14	18	25	35	49	39			0	2
Houston	19	27	12	16	16	12	11	13	59	45	41	30			8	4
Los Angeles	19	16	26	16	23	23	30	26	36	43	28	36			4	6
San Francisco	18	13	12	9	19	15	19	8	36	39	40	31			3	2
Denver	17	22	21	14	16	16	26	18	45	45	26	36			5	6
Total banks	106	127	116	139												
Average	19.2%	18.6%	15.1%	15.3%	18.5%	15.7%	16.3%	16.0%	40.5%	41.5%	35.1%	34.0%			4.8%	5.0%
Median	18.1%	17.1%	15.2%	14.3%	19.3%	17.3%	17.8%	16.4%	40.2%	39.5%	33.3%	34.6%			3.1%	3.0%

*No respondents. $\frac{*Q24}{Q30} \times 100$ $\frac{+Q25}{Q30} \times 100$ $\frac{\neq Q26}{Q30} \times 100$ $\frac{-Q27}{Q30} \times 100$

**No comparable data collected.

Table 4 (Continued)

Area	Trancode Misread@				Other Reasons#			
	1979**	1980**	1981**	1982	1979	1980	1981	1982
Boston			4%	4%	10%	14%	17%	16%
New York			7	5	21	27	31	26
Philadelphia			12	9	26	29	22	27
Pittsburgh			7	11	22	29	29	34
Washington, D.C.			12	8	13	24	23	21
Atlanta			6	7	24	27	16	23
Chicago			3	6	21	26	16	17
Cleveland			9	9	24	20	11	8
Detroit			3	3	25	21	20	33
Minneapolis/ St. Paul			10	9	*	*	27	17
St. Louis			10	6	28	25	18	22
Dallas			3	6	25	36	7	13
Houston			9	3	7	15	19	34
Los Angeles			6	8	21	18	6	8
San Francisco			7	4	27	33	18	46
Denver			9	15	21	17	13	11
Average			6.6%	6.8%	21.9%	24.2%	22.2%	23.0%
Median			5.2%	5.0%	20.6%	21.5%	13.0%	15.3%

*No respondents

$\frac{@Q28}{Q30} \times 100$ $\frac{\#Q29}{Q30} \times 100$

**No comparable data collected.

The average rate of transit return items increased slightly from 910.1 per 100,000 transit items sent in 1981 to 936.1 (Table 5), while the median rate also rose to 862.6 items per 100,000 transit items sent — a 4.7% increase. The average rate had been 1,207.1 during the 1979 survey period.

Table 5

Transit Returns by Area
(Rate per 100,000 of Transit Items Sent)

Area	ADI Banks				All Banks			
	1979	1980	1981	1982	1979	1980	1981	1982
Boston	832.6	712.7	776.5	694.1	911.3	787.2	843.2	682.6
New York	1,601.9	901.0	807.3	739.9	1,310.4	904.3	908.6	946.2
Philadelphia	942.9	1,046.2	692.9	773.8	813.6	800.4	667.1	653.5
Pittsburgh	845.5	846.0	848.9	709.0	598.9	831.8	725.6	673.8
Washington, D.C.	974.2	1,228.6	927.0	1,008.9	1,070.3	1,138.4	865.7	930.5
Atlanta	1,066.1	726.0	927.9	1,051.1	1,298.9	1,046.6	1,028.2	1,117.5
Chicago	1,032.7	960.9	690.7	585.0	1,005.0	929.4	732.2	771.7
Cleveland	1,352.1	1,511.3	1,581.1	894.2	1,039.5	1,106.5	984.3	832.0
Detroit	1,453.6	1,417.3	1,339.7	758.4	1,320.6	966.9	1,067.5	819.3
Minneapolis/St. Paul	*	*	3,299.3	958.1	*	*	1,169.7	711.5
St. Louis	1,276.0	1,260.9	895.9	940.9	1,428.5	1,309.0	1,014.8	757.8
Dallas	1,311.7	1,000.2	834.2	1,069.8	1,530.1	867.7	1,293.5	1,131.7
Houston	1,173.4	1,311.6	775.4	1,580.3	1,308.2	1,474.5	1,651.6	1,287.9
Los Angeles	1,123.3	2,092.9	*	2,038.4	1,085.4	1,134.9	1,514.1	1,184.2
San Francisco	2,046.8	1,547.7	1,183.3	1,429.7	1,712.4	1,088.6	1,095.1	1,353.7
Denver	1,923.2	899.2	1,450.2	1,484.8	2,166.1	1,085.4	1,526.8	1,332.3
Total banks	30	36	33	38	146	165	149	164
Average	1,325.9	1,046.0	875.8	974.9	1,207.1	1,004.1	910.1	936.1

*No respondents.

$$\frac{Q18}{Q10} \times 100{,}000$$

In 1976, 64% of the responding banks experienced an average return rate under 1,000 items per 100,000 transit items sent. By 1982, only 66% of the responding banks reported a rate under 1,000 items (Table 6). Return items continue to pose a significant problem to the check processing industry because automated systems have not yet been perfected to deal with this labor-intensive operation. Although an endorsement standard was approved by the American National Standards Institute several years ago, it now appears that federal legislation may be enacted to enforce compliance with this standard. When this occurs, more productive processing of return items is anticipated.

Table 7 shows the distribution of banks according to their return item rate and the average dollar value of each item returned. The average value for a return item decreased 3.8% from $705 in 1981 to $678 in 1982, while the median value decreased to $511 in the 1982 survey.

Table 6

Distribution of the Transit Return Rate

Transit Return Rate	ADL Banks				All Banks			
	1979	1980	1981	1982	1979	1980	1981	1982
0 - 200	0	0	0	0	2	1	1	3
200 - 400	0	1	0	1	2	6	4	9
400 - 600	0	0	4	4	11	7	18	13
600 - 800	3	11	9	11	25	44	45	48
800 - 1,000	9	5	11	10	34	37	37	36
1,000 - 1,200	3	8	2	5	14	28	10	24
1,200 - 1,400	8	2	2	3	21	19	11	14
1,400 - 1,600	2	5	2	1	9	8	7	4
1,600 - 1,800	0	2	1	0	4	7	5	1
1,800 - 2,000	1	0	0	1	7	4	3	4
Over 2,000	4	2	2	2	17	4	8	8
Total banks	30	36	33	38	146	165	149	164
Average	1,325.9	1,046.0	875.8	974.9	1,207.1	1,004.1	910.1	936.1
Median	1,190.3	1,021.9	840.4	847.3	972.0	931.1	824.1	862.6

$$\frac{Q18}{Q10} \times 100{,}000$$

Table 7

Transit Return Dollar Value by Rate of Transit Returns

ADL Banks

Transit Returns per 100,000 Items Sent*	Number of Banks 1979	Number of Banks 1980	Number of Banks 1981	Number of Banks 1982	Average Dollar Value+ 1979	Average Dollar Value+ 1980	Average Dollar Value+ 1981	Average Dollar Value+ 1982
0 - 500	0	1	1	1	$ 0	$ 255	$ 686	$1,829
500 - 1,000	12	16	23	25	619	1,259	785	815
1,000 - 1,500	12	12	5	8	1,071	610	539	586
1,500 - 2,000	2	5	2	2	493	1,353	1,678	1,884
Over 2,000	4	2	2	2	2,166	520	762	459
Total banks	30	36	33	38				
Average					$ 948	$1,043	$ 719	$ 728
Median					$ 620	$ 758	$ 624	$ 654

All Banks

Transit Returns per 100,000 Items Sent*	Number of Banks 1979	Number of Banks 1980	Number of Banks 1981	Number of Banks 1982	Average Dollar Value+ 1979	Average Dollar Value+ 1980	Average Dollar Value+ 1981	Average Dollar Value+ 1982
0 - 500	8	8	12	16	$ 679	$ 714	$ 737	$1,027
500 - 1,000	66	87	93	93	555	705	614	671
1,000 - 1,500	40	50	25	39	1,102	583	717	501
1,500 - 2,000	15	16	11	8	365	1,023	801	795
Over 2,000	17	4	8	8	858	513	866	645
Total banks	146	165	149	164				
Average					$ 800	$ 813	$ 705	$ 678
Median					$ 409	$ 496	$ 528	$ 511

* $\frac{Q18}{Q10}$ X 100,000 + $\frac{Q19}{Q18}$

Free and Lost Items

Definition: Free items are items received but not listed on the incoming cash letter. Lost items are items listed on the incoming cash letter but not received.

The combined average rate of free and lost items discovered decreased from 18.8 items per 100,000 incoming items in 1981 to 14.6 items in 1982, while the median rate dropped 26.7% to 11.0 items per 100,000 incoming items in 1982 (Table 8). Tables 9 and 10 show, respectively, the rate of free items discovered and of lost items discovered. As in previous surveys, the average lost item rate (8.6) was greater than the average free item rate (5.9). A review of Tables 9 and 10 shows that the Minneapolis/St. Paul area banks have been particularly effective in controlling the quality of cash letter preparation during the last year, achieving nearly a 50% reduction in both areas. The distribution of free and lost items is shown in Table 11.

Table 8

Free and Lost Items Discovered by Area
(Rate per 100,000 Incoming Items)

Area	ADL Banks				All Banks			
	1979	1980	1981	1982	1979	1980	1981	1982
Boston	14.8	11.2	16.9	13.2	11.9	10.2	11.5	10.2
New York	25.6	19.5	16.9	18.9	28.7	14.6	20.3	14.2
Philadelphia	12.7	7.3	7.2	6.4	8.2	13.3	29.8	14.5
Pittsburgh	15.0	10.1	10.3	16.2	9.3	15.7	12.1	14.2
Washington, D.C.	24.3	21.1	2.8	3.5	18.5	26.5	23.1	19.0
Atlanta	30.3	93.3	14.8	7.1	20.6	26.2	16.1	10.3
Chicago	16.1	14.0	16.9	14.2	12.2	14.7	16.5	16.2
Cleveland	25.2	39.5	53.3	28.6	25.3	23.1	33.0	19.4
Detroit	40.6	58.2	26.3	26.6	17.3	31.9	22.4	44.6
Minneapolis/St. Paul	*	*	14.4	14.9	*	*	36.9	18.7
St. Louis	53.0	33.0	43.2	20.2	25.9	31.9	25.6	30.5
Dallas	37.6	18.8	10.5	21.5	52.6	16.9	15.2	17.6
Houston	14.3	12.8	21.4	13.6	21.0	24.3	24.5	10.4
Los Angeles	4.9	20.8	*	28.7	48.4	18.7	37.2	22.2
San Francisco	42.1	29.9	24.1	9.5	26.3	19.6	15.5	21.2
Denver	24.4	4.6	3.5	10.5	18.1	10.6	10.5	8.8
Total banks	29	36	31	38	148	165	143	166
Average	25.2	21.4	17.1	13.5	21.7	19.6	18.8	14.6
Median	19.5	17.8	13.9	14.9	13.9	13.4	15.0	11.0

*No respondents.

$$\frac{Q39 + Q41}{Q1 + Q2} \times 100{,}000$$

Table 9

Free Items Discovered by Area
(Rate per 100,000 Incoming Items)

	ADL Banks				All Banks			
Area	1979	1980	1981	1982	1979	1980	1981	1982
Boston	5.5	4.3	6.3	5.4	3.3	4.1	3.6	4.6
New York	11.1	8.6	5.3	7.2	6.4	7.2	7.5	5.0
Philadelphia	3.7	3.0	2.6	2.3	3.5	4.8	4.7	8.1
Pittsburgh	3.8	4.1	4.2	4.9	3.4	3.4	3.0	4.0
Washington, D.C.	9.3	7.8	1.1	1.6	7.5	8.2	13.0	9.2
Atlanta	10.7	37.3	6.5	3.1	7.8	10.9	6.9	3.8
Chicago	4.3	4.7	7.0	7.0	4.0	6.3	6.4	8.2
Cleveland	9.7	16.1	25.0	14.0	7.1	8.1	9.3	6.3
Detroit	21.1	7.9	8.7	8.0	16.3	6.1	6.0	6.9
Minneapolis/St. Paul	*	*	7.5	6.7	*	*	14.2	7.0
St. Louis	36.5	18.3	20.8	10.8	12.4	15.4	10.6	11.8
Dallas	14.7	7.9	5.3	10.4	23.5	6.6	8.8	7.1
Houston	5.2	6.9	12.1	4.5	6.4	8.8	15.1	3.9
Los Angeles	1.2	6.9	*	12.4	40.4	4.7	17.7	6.9
San Francisco	15.8	6.9	9.0	1.6	7.5	5.2	4.4	8.3
Denver	13.7	1.6	2.6	4.4	10.1	4.8	5.0	3.1
Total banks	29	36	31	37	148	165	143	166
Average	10.4	8.1	7.7	5.6	8.9	7.7	7.8	5.9
Median	6.6	6.0	5.5	5.7	4.1	4.6	4.3	3.4

*No respondents.

$$\frac{Q39}{Q1 + Q2} \times 100{,}000$$

Table 10

Lost Items Discovered by Area
(Rate per 100,000 Incoming Items)

	ADL Banks				All Banks			
Area	1979	1980	1981	1982	1979	1980	1981	1982
Boston	9.3	6.9	10.6	7.8	8.5	6.0	7.9	5.6
New York	14.5	11.0	11.6	11.7	22.4	7.4	12.8	9.2
Philadelphia	9.0	4.3	4.6	4.1	4.7	8.5	25.1	6.5
Pittsburgh	11.2	6.0	6.1	11.3	5.9	12.3	9.0	10.2
Washington, D.C.	15.1	13.4	1.7	1.9	11.0	18.3	10.1	9.7
Atlanta	19.7	56.0	8.2	4.0	12.8	15.3	9.2	6.5
Chicago	11.9	9.3	9.8	7.3	8.2	8.4	10.1	8.0
Cleveland	15.5	23.4	28.4	14.6	18.2	15.0	23.7	13.2
Detroit	19.6	50.4	17.6	18.6	11.9	25.7	16.4	37.8
Minneapolis/St. Paul	*	*	6.9	8.2	*	*	22.7	11.6
St. Louis	16.4	14.8	22.3	9.4	13.5	16.5	15.0	18.7
Dallas	22.9	10.9	5.2	11.1	29.1	10.3	6.4	10.5
Houston	9.2	5.9	9.3	9.1	14.6	15.5	9.4	6.4
Los Angeles	3.7	13.9	*	16.3	8.0	14.0	19.5	15.2
San Francisco	26.2	23.0	15.0	7.9	18.8	14.3	11.0	12.9
Denver	10.7	3.0	1.0	6.1	7.9	5.7	5.5	5.8
Total banks	29	36	31	37	148	165	143	166
Average	14.7	13.3	9.5	7.9	12.9	11.9	11.0	8.6
Median	12.5	10.1	6.9	8.2	8.6	8.1	9.0	7.0

*No respondents.

$$\frac{Q41}{Q1 + Q2} \times 100{,}000$$

Table 11

Distribution of the Free and Lost Items Rate

Rate	ADL Banks				All Banks			
	1979	1980	1981	1982	1979	1980	1981	1982
0 - 5	1	5	6	5	21	29	22	30
5 - 10	5	7	7	10	37	40	31	46
10 - 15	6	4	5	4	23	20	19	26
15 - 20	2	5	3	7	14	13	13	16
20 - 25	4	4	2	4	13	14	16	16
25 - 30	1	2	2	1	7	8	12	10
30 - 35	0	1	2	2	6	13	6	6
35 - 40	1	2	1	1	7	8	2	5
40 - 45	3	3	1	1	6	6	7	2
45 - 50	1	0	0	0	4	3	2	0
50 - 100	4	3	2	2	8	11	10	8
Over 100	0	0	0	0	2	0	3	1
Total banks	29	36	31	37	148	165	143	166
Average	25.2	21.4	17.1	13.5	21.7	19.6	18.8	14.6
Median	19.5	17.8	13.9	15.0	13.9	13.4	15.0	11.0

$$\frac{Q39 + Q41}{Q1 + Q2} \times 100{,}000$$

Missent, Miscoded, and Listing Error Items

Definition: Items that are discovered to have been missent for any reason, or that have been miscoded by this bank or other banks, or an error when an item was listed for one amount but drawn for a different amount.

In 1982, the average rate of missent, miscoded, and listing error items discovered out of each 100,000 transit items sent decreased 16.3% from 16.6 items in 1981 to 13.9 items in 1982, while the median rate dropped 10.0% to 11.7 items (Table 12).

The average rate of missent items continued its improvement by decreasing to 5.0 items (Table 13), while the average rate of miscoded items also declined to 5.3 items in the 1982 survey (Table 14). The average number of listing errors discovered also improved slightly to 3.6 items per 100,000 transit items sent in 1982 (Table 15). With a shifting of traditional sending patterns due to increased competition in the check clearing business, the evidence suggests that transit departments have been able to quickly adapt to these changes. The distribution of these error rates is shown in Table 16, where the evidence of renewed interest in reducing handling errors is best signified by the 87.5% increase in the number of banks that now report the lowest error rate, 0-5%.

Table 12

Missent, Miscoded, and Listing
Error Items Discovered by Area
(Rate per 100,000 Transit Items Sent)

Area	ADL Banks 1979	1980	1981	1982	All Banks 1979	1980	1981	1982
Boston	4.0	38.5	8.3	10.0	9.5	24.0	29.3	15.0
New York	40.6	25.4	23.3	30.9	47.2	23.4	24.3	20.6
Philadelphia	9.6	12.8	10.7	15.0	18.4	29.6	16.2	17.6
Pittsburgh	5.1	14.7	13.1	9.8	9.5	15.4	13.4	11.2
Washington, D.C.	7.7	2.8	18.5	9.5	17.7	16.1	14.4	15.1
Atlanta	46.6	50.8	12.6	7.4	26.1	20.9	16.4	11.6
Chicago	17.5	14.7	20.9	15.1	12.9	10.0	15.8	14.4
Cleveland	17.3	27.4	36.9	16.8	15.7	17.8	21.5	16.4
Detroit	4.6	13.5	12.7	10.6	17.4	20.0	17.4	13.3
Minneapolis/St. Paul	*	*	43.6	31.6	*	*	33.9	18.9
St. Louis	34.7	20.4	26.2	14.3	12.4	14.1	13.8	14.2
Dallas	26.4	21.6	7.1	17.0	53.7	24.1	9.6	17.3
Houston	20.6	10.0	8.9	36.1	20.3	32.8	32.3	21.2
Los Angeles	29.6	26.5	*	12.4	25.2	31.0	25.8	13.3
San Francisco	15.2	26.4	17.4	11.3	30.1	22.6	23.3	17.6
Denver	8.4	12.1	5.7	8.0	14.4	12.9	5.7	9.5
Total banks	29	36	32	37	149	168	143	165
Average	22.2	20.1	14.2	14.2	23.0	18.6	16.6	13.9
Median	17.2	17.2	12.6	12.7	13.4	14.9	13.0	11.7

*No respondents.

$$\frac{Q33 + Q35 + Q37}{Q10} \times 100{,}000$$

Table 13

Missent Items Discovered by Area
(Rate per 100,000 Transit Items Sent)

Area	ADL Banks 1979	1980	1981	1982	All Banks 1979	1980	1981	1982
Boston	0.5	32.4	4.4	1.8	2.4	15.2	20.2	8.0
New York	20.8	14.7	11.5	21.4	34.0	14.6	11.6	10.0
Philadelphia	*	6.1	3.9	7.5	10.3	19.4	3.7	4.3
Pittsburgh	0.5	4.0	5.9	1.9	2.2	2.4	4.0	2.0
Washington, D.C.	3.0	0.5	5.2	*	9.5	5.1	4.6	5.7
Atlanta	21.8	12.8	0.1	1.9	9.1	5.1	3.8	4.8
Chicago	6.0	4.4	6.2	3.4	5.3	2.8	8.0	5.8
Cleveland	0.1	2.2	15.6	0.1	6.8	4.4	10.4	5.4
Detroit	*	3.2	*	2.0	12.6	10.4	9.6	3.5
Minneapolis/St. Paul	*	*	*	25.2	*	*	7.2	8.5
St. Louis	8.4	5.2	5.4	2.9	2.8	3.1	2.7	2.1
Dallas	5.3	9.1	*	5.4	40.3	16.1	4.0	6.7
Houston	8.9	1.7	3.5	24.8	15.1	25.5	24.2	7.2
Los Angeles	20.8	10.8	*	1.2	20.8	20.1	15.6	6.6
San Francisco	3.5	9.8	5.9	2.7	20.9	12.2	13.7	10.8
Denver	1.4	0.6	1.5	0.3	6.6	4.8	2.2	4.6
Total banks	29	36	32	37	149	168	143	165
Average	8.2	7.9	4.8	5.5	13.5	7.9	6.5	5.0
Median	2.3	3.8	2.7	1.7	3.6	4.2	3.9	3.0

*No respondents.

$\frac{Q33}{Q10}$ X 100,000

Table 14

Miscoded Items Discovered by Area
(Rate per 100,000 Transit Items Sent)

	ADL Banks				All Banks			
Area	1979	1980	1981	1982	1979	1980	1981	1982
Boston	1.3	5.1	2.9	1.8	6.0	6.1	6.9	3.7
New York	12.0	8.4	10.3	6.9	9.3	4.7	9.4	5.6
Philadelphia	2.7	4.9	5.2	2.0	5.2	5.8	8.3	7.8
Pittsburgh	4.1	6.9	5.6	5.5	5.8	7.7	7.3	6.6
Washington, D.C.	4.2	1.7	9.7	9.3	5.4	6.6	7.2	5.8
Atlanta	16.2	31.7	7.1	3.6	8.4	8.6	7.0	4.5
Chicago	8.3	6.4	8.0	8.2	4.4	4.6	4.3	5.8
Cleveland	9.0	10.7	12.8	7.9	4.8	6.6	5.8	5.8
Detroit	0.3	3.6	4.8	4.9	2.6	3.5	3.0	5.2
Minneapolis/St. Paul	*	*	7.4	5.8	*	*	8.2	7.2
St. Louis	11.7	5.1	4.3	3.8	5.9	4.0	3.6	4.9
Dallas	5.4	4.8	6.4	9.1	4.0	3.4	3.0	6.6
Houston	2.5	1.5	2.8	8.8	1.9	3.6	4.0	5.6
Los Angeles	6.9	11.7	*	5.5	3.0	7.4	6.9	4.2
San Francisco	7.1	10.6	9.1	6.0	11.8	6.7	6.6	4.2
Denver	3.8	5.9	3.8	5.6	3.2	4.2	3.1	3.5
Total banks	29	36	32	37	150	169	146	166
Average	7.5	7.5	6.5	5.4	7.7	6.0	6.4	5.3
Median	5.5	5.8	4.5	5.8	4.1	4.7	4.3	4.3

*No respondents.

$$\frac{Q35}{Q10} \times 100{,}000$$

Table 15

Listing Error Items Discovered by Area
(Rate per 100,000 Transit Items Sent)

	ADL Banks				All Banks			
Area	1979	1980	1981	1982	1979	1980	1981	1982
Boston	2.2	1.0	0.9	6.4	1.1	2.7	2.2	3.3
New York	7.8	2.3	1.5	2.5	3.9	4.0	3.4	5.0
Philadelphia	7.0	1.9	1.6	5.6	2.9	4.4	4.2	5.4
Pittsburgh	0.5	3.8	1.6	2.4	1.5	5.2	2.2	2.7
Washington, D.C.	0.4	0.7	3.6	0.2	2.7	4.4	2.7	3.5
Atlanta	8.6	6.3	5.4	1.8	8.6	6.8	5.7	2.2
Chicago	3.2	3.9	6.6	3.5	3.2	2.6	3.5	2.5
Cleveland	8.2	14.5	8.5	8.8	4.2	6.8	5.4	5.3
Detroit	4.3	6.7	7.8	3.7	2.2	6.1	4.7	4.6
Minneapolis/St. Paul	*	*	36.2	0.6	*	*	18.5	3.2
St. Louis	14.7	10.2	16.6	7.6	3.8	7.0	7.5	7.3
Dallas	15.6	7.8	0.7	2.5	9.4	4.7	2.7	4.0
Houston	9.2	6.7	2.6	2.5	3.3	3.7	4.1	8.4
Los Angeles	2.0	4.0	*	5.6	1.3	3.6	3.1	2.5
San Francisco	4.6	5.9	2.4	2.7	3.1	3.7	2.7	2.6
Denver	3.2	5.6	0.4	2.1	4.5	4.0	0.4	1.5
Total banks	29	36	32	37	150	169	144	166
Average	6.4	4.7	3.0	3.3	3.9	4.3	3.8	3.6
Median	2.8	4.5	1.6	3.5	2.0	2.4	2.1	2.1

*No respondents.

$$\frac{Q37}{Q10} \times 100{,}000$$

Table 16

Distribution of Missent, Miscoded, and Listing Error Items Rate

Rate	ADL Banks				All Banks			
	1979	1980	1981	1982	1979	1980	1981	1982
0 - 5	3	2	4	3	26	20	16	30
5 - 10	7	6	8	8	35	38	32	36
10 - 15	2	7	7	11	21	26	31	34
15 - 20	5	6	2	6	17	23	18	19
20 - 25	3	4	4	3	15	17	13	20
25 - 30	3	6	3	2	8	15	8	11
30 - 35	1	1	1	1	3	6	7	5
35 - 40	2	1	0	2	5	4	5	3
40 - 45	1	0	1	0	2	4	3	0
45 - 50	0	0	1	1	2	0	3	3
50 - 100	1	3	1	0	11	13	6	4
100 - 200	1	0	0	0	3	1	1	0
Over 200	0	0	0	0	1	1	0	0
Total banks	29	36	32	37	149	168	143	165
Average	22.2	20.1	14.2	14.2	23.0	18.6	16.6	14.0
Median	17.2	17.2	12.6	12.7	13.4	14.9	13.0	11.7

$$\frac{Q33 + Q35 + Q37}{Q10} \times 100{,}000$$

Exception Items Plus Return Items

Definition: Transit items that require special reconcilement with other banks, such as missent, miscoded, listing errors, returns, and free and lost items.

The average rate of exception items and transit return items discovered in 1982 was 967.3 items per 100,000 transit items sent. This represents a small increase from 1981 when the rate was 959.4 (Table 17). Of the 164 responding banks, 63% reported rates under 1,000 items discovered, 32% reported rates ranging from 1,000 to 2,000 items, and 5% reported rates over 2,000 items discovered (Table 18). Table 18 also shows that the median rate increased 3.1% from 865.0 items in 1981 to 891.8 items in 1982.

Table 19 shows the percent of exceptions, returns, and reject items to the total volume of items processed. The average rate of 2.0% of all items requiring special handling decreased 16.7% from the previous year, while the median value dropped 20.0% to 2.0%.

Table 20 shows the number of banks distributed according to their rate of exceptions, returns, and rejects. In 1979, only 15.3% of all reporting banks had an overall rate less than 2%; however, this figure improved to 48.1% in 1982.

Table 17

Exception and Return Items Discovered by Area
(Rate per 100,000 Transit Items Processed)

Area	ADL Banks 1979	1980	1981	1982	All Banks 1979	1980	1981	1982
Boston	850.8	761.6	798.8	715.9	934.3	884.5	883.1	709.1
New York	1,681.5	950.4	851.3	788.3	1,383.5	902.4	939.9	982.4
Philadelphia	966.3	1,066.5	715.6	795.8	856.0	843.6	718.6	685.8
Pittsburgh	866.2	871.9	873.4	738.5	619.7	863.1	753.1	702.1
Washington, D.C.	997.8	1,241.0	947.8	1,021.8	1,104.5	1,172.5	904.9	964.8
Atlanta	1,141.8	816.4	955.8	1,077.9	1,351.1	1,240.4	1,056.0	1,140.4
Chicago	1,071.9	997.6	730.1	616.8	1,032.1	957.0	766.1	802.8
Cleveland	1,397.0	1,591.2	1,910.3	943.5	1,082.5	1,151.6	1,095.9	871.4
Detroit	1,505.7	1,494.1	1,384.9	794.7	1,371.5	895.5	1,185.8	855.9
Minneapolis/St. Paul	*	*	3,472.9	1,022.3	*	*	1,422.3	746.5
St. Louis	1,331.2	1,312.8	957.9	974.1	1,465.7	1,353.0	1,053.5	801.6
Dallas	1,376.8	1,041.9	852.6	1,107.3	1,650.6	910.3	1,288.2	1,168.2
Houston	1,212.7	1,345.8	806.1	1,642.5	1,346.5	1,533.7	1,250.8	1,320.4
Los Angeles	1,157.3	2,144.6	*	2,070.1	1,160.8	1,194.3	1,767.3	1,221.0
San Francisco	2,110.9	1,612.5	1,225.8	1,456.2	1,932.9	1,276.3	1,158.6	1,397.2
Denver	1,960.1	918.7	1,461.1	1,508.1	2,200.4	1,111.8	1,542.6	1,352.5
Total banks	30	36	32	38	144	167	143	164
Average	1,376.3	1,089.3	915.5	1,006.8	1,266.2	1,062.2	959.4	967.3

*No respondents.

$$\frac{Q18 + Q43}{Q10} \times 100{,}000$$

Table 18

Distribution of the Exception and Return Items Rate

	ADL Banks				All Banks			
Rate	1979	1980	1981	1982	1979	1980	1981	1982
0 - 250	0	1	0	0	2	4	2	2
250 - 500	0	0	1	1	5	4	6	13
500 - 750	0	3	7	11	17	23	32	39
750 - 1,000	12	11	14	12	45	55	51	50
1,000 - 1,250	3	11	4	7	18	44	22	30
1,250 - 1,500	8	1	2	3	21	12	11	14
1,500 - 1,750	2	6	2	1	9	11	7	4
1,750 - 2,000	1	1	0	1	10	6	3	4
2,000 - 2,500	2	2	0	1	9	5	4	5
Over 2,500	2	0	2	1	8	3	5	3
Total banks	30	36	32	38	144	167	143	164
Average	1,376.3	1,089.3	915.5	1,006.8	1,266.2	1,062.2	959.4	967.3
Median	1,248.6	1,059.7	868.6	882.9	1,044.5	969.0	865.0	891.8

$$\frac{Q18 + Q43}{Q10} \times 100{,}000$$

Table 19

Percent of Exceptions, Returns, and
Rejects to the Number of Items Processed

	ADL Banks				All Banks			
Area	1979	1980	1981	1982	1979	1980	1981	1982
Boston	2.9%	2.6%	2.3%	2.5%	2.5%	2.6%	2.4%	2.0%
New York	4.6	3.0	2.7	2.0	3.4	2.6	2.7	2.2
Philadelphia	1.5	1.8	2.2	1.8	2.3	2.3	2.8	2.5
Pittsburgh	1.8	1.5	1.7	1.5	1.9	1.8	1.8	1.4
Washington, D.C.	1.6	*	1.2	1.5	2.6	2.6	1.8	1.9
Atlanta	2.6	2.1	2.2	2.5	3.0	2.6	2.2	2.4
Chicago	3.4	2.4	2.3	2.0	2.8	2.5	2.3	2.4
Cleveland	2.4	2.9	3.2	2.1	2.9	2.7	2.2	2.0
Detroit	2.1	2.8	2.3	2.0	3.2	2.7	2.9	2.2
Minneapolis/St. Paul	*	*	8.7	2.3	*	*	3.8	1.8
St. Louis	2.6	2.7	1.8	1.9	3.0	2.8	2.4	2.0
Dallas	4.1	3.1	3.3	2.4	3.3	2.4	3.1	2.4
Houston	3.5	3.7	1.9	3.5	3.0	3.8	4.4	2.5
Los Angeles	2.2	2.0	*	3.9	2.8	2.1	2.2	2.3
San Francisco	2.4	2.6	2.1	1.6	3.6	2.2	2.5	1.6
Denver	3.3	2.9	2.9	2.6	3.2	2.4	2.3	2.3
Total banks	30	33	32	38	144	155	140	158
Average	3.1%	2.5%	2.2%	2.0%	2.9%	2.4%	2.4%	2.0%
Median	2.7%	2.6%	2.3%	2.0%	2.7%	2.6%	2.5%	2.0%

*No respondents.

$$\frac{Q30 + Q18 + Q43}{Q16} \times 100$$

Table 20

Distribution of Exceptions, Returns, and Reject Rate

Rate	ADL Banks				All Banks			
	1979	1980	1981	1982	1979	1980	1981	1982
0% - 1.5%	0	2	4	7	6	15	20	31
1.5% - 2.0%	4	5	4	12	16	24	34	45
2.0% - 2.5%	9	6	14	11	37	37	34	40
2.5% - 3.0%	6	12	5	4	34	42	28	24
3.0% - 3.5%	4	5	2	1	20	21	9	8
3.5% - 4.0%	2	1	0	2	12	8	5	5
4.0% - 4.5%	1	2	1	1	8	4	2	2
4.5% - 5.0%	2	0	0	0	5	1	1	0
Over 5.0%	2	0	2	0	6	3	7	3
Total banks	30	33	32	38	144	155	140	158
Average	3.1	2.5	2.2	2.0	2.9	2.4	2.4	2.0
Median	2.7	2.6	2.3	2.0	2.7	2.6	2.5	2.0

$$\frac{Q30 + Q18 + Q43}{Q16} \times 100$$

A Dollar Analysis of Return and Exception Items

During the survey week, 165 banks collected data on the dollar value of the return and exception items processed. The data are shown by geographic area in Table 21. The 1982 average for a bank's weekly dollar volume of return items processed increased 8.1% from 1981. There were dramatic changes in the 1982 average for a bank's weekly dollar volume of exception items discovered and resolved. The average discovery total dropped by 37.8%, while the average resolved total fell by 41.4%. Despite these improvements, 1980 average levels have not yet been reached.

Outstanding Exception Items

Table 22 compares the outstanding exception dollars and number of items on an aged basis for 144 reporting banks. The resolution time for outstanding exception items increased slightly from 1981, when 70.9% of all exception items were more than one month old. In 1982, 76.3% of the items were reported more than one month outstanding, although the dollar amount of outstanding exception items was significantly reduced. The 1981 survey showed 38.8% of exception item dollars were more than one month old; that figure was reported at 24.1% for 1982.

With the implementation of the Federal Reserve System's pricing for check collection services promoting different and more innovative interbank relationships, bankers must recognize these trends and work to streamline the internal reconcilement function while investigating more efficient methods of transaction control with other commercial banks and Federal Reserve Banks. Software packages have been developed in-house and by vendors to improve the productivity of the reconcilement operation.

Table 23 compares the aged distribution of outstanding exception items for the average bank according to the method used to microfilm items: after reader/sorter processing, before reader/sorter processing, or during reader/sorter processing. Because of the various resource sizes of the reporting banks, the amount and the number of items outstanding should not be compared. The key comparison is the relative percentage. The data indicate that banks have made significant progress in reducing the age of outstanding exception dollars, regardless of the microfilming method used. Most of the large correspondent banks microfilm during reader/sorter processing, and it is significant to note that these banks have not improved their performance in the age distribution of outstanding numbers of items. It is only through the efforts of these banks, as well as the Federal Reserve Banks, that the reconcilement problems of smaller banks will be resolved.

A Comparison of Balancing Policy and Experience

Table 24 compares how bankers responded since 1979 to questions regarding their balancing procedures, their evaluation of the growth of the exception item problem, and the status of their personnel responsible for making interbank adjustments. The trend in balancing procedures

Table 21

Return and Exception Item Dollar Analysis by Area
(During the Survey Week)

Area	Return Items: Total $ Discovered[1]	Return Items: Average $ Value/ Item[2]	Exception Items Discovered: Total $[3]	Exception Items Discovered: Average $ Value/ Item[4]	Exception Items Resolved: Total $[5]	Exception Items Resolved: Average $ Value/ Item[6]
Boston	$ 124,455,055	$ 762	$ 40,249,304	$ 6,261	$ 40,026,309	$ 6,990
New York	279,780,118	1,084	199,912,020	12,244	205,958,063	15,551
Philadelphia	93,103,107	909	58,678,709	10,754	33,982,999	11,182
Pittsburgh	40,484,220	693	4,083,529	2,251	3,039,811	4,916
Washington, D.C.	68,171,930	614	54,865,227	11,270	60,527,208	13,038
Atlanta	249,617,935	520	100,766,737	10,465	86,983,991	11,219
Chicago	150,237,808	764	778,685,618	41,804	770,976,604	65,603
Cleveland	46,499,437	697	83,257,590	38,625	79,694,567	291,692
Detroit	33,002,824	357	16,025,089	10,772	11,137,918	10,902
Minneapolis/ St. Paul	19,949,364	504	167,970,585	31,878	165,961,095	36,113
St. Louis	90,496,326	580	574,434,645	75,323	744,143,797	92,611
Dallas	99,378,941	540	88,655,011	9,638	76,406,752	14,062
Houston	70,433,962	489	40,081,988	8,796	56,769,098	14,682
Los Angeles	145,216,879	482	31,277,234	2,968	27,228,222	3,185
San Francisco	191,040,498	391	48,508,415	3,797	46,975,844	4,143
Denver	100,686,901	1,050	25,603,553	9,002	29,690,581	18,010
Total 165 Banks	$1,802,555,305	-	$2,313,055,254	-	$2,439,502,859	-
1982 Average 165 Banks	$ 10,924,578	$ 675	$ 14,278,119	$25,901	$ 14,875,017	$34,048
1981 Average 149 Banks	10,103,692	705	22,933,134	36,792	25,397,210	$50,149
1980 Average 165 Banks	11,257,764	813	12,019,983	19,262	11,423,479	23,885
1979 Average 149 Banks	13,476,748	727	9,396,938	14,802	7,242,381	18,747
1982 Median 165 Banks	$ 4,670,104	$ 510	$ 1,532,534	$ 4,166	$ 836,486	$ 3,756
1981 Median 149 Banks	4,440,672	528	1,371,062	3,496	1,175,195	3,913
1980 Median 165 Banks	4,363,116	496	1,116,643	3,350	817,788	3,448
1979 Median 149 Banks	3,765,978	409	723,152	2,968	662,562	2,970

[1]Q19 [2]Q19 ÷ Q18 [3]Q45 [4]Q45 ÷ Q43 [5]Q46 [6]Q46 ÷ Q44.

*No respondents.

Table 22

Age Distribution of Outstanding Exception Items

Dollars Outstanding

Months Outstanding	1979 144 Banks Dollars	Percent	1980 143 Banks Dollars	Percent	1981 124 Banks Dollars	Percent	1982 144 Banks Dollars	Percent
0 - 1	$601,659,946	70.0%	$541,802,776	61.8%	$454,148,269	61.2%	$463,171,271	75.9%
1 - 2	156,719,650	18.2	171,240,399	19.5	165,448,452	22.3	63,630,792	10.4
2 - 4	57,975,289	6.8	85,763,209	9.8	68,630,665	9.2	33,375,661	5.5
4 - 6	29,496,372	3.4	43,450,668	5.0	24,743,939	3.3	17,472,913	2.9
Over 6	13,131,047	1.6	34,629,413	3.9	29,250,333	3.9	32,577,625	5.3
Total	$859,982,204	100.0%	$876,886,465	100.0%	$742,221,658	100.0%	$610,228,262	100.0%

Q71 = Q72 + Q73 + Q74 + Q75 + Q76

Items Outstanding

Months Outstanding	1979 144 Banks Items	Percent	1980 143 Banks Items	Percent	1981 124 Banks Items	Percent	1982 144 Banks Items	Percent
0 - 1	104,396	29.9%	88,122	22.8%	80,200	29.1%	71,448	23.7%
1 - 2	87,499	25.2	81,215	21.0	70,395	25.6	67,413	22.3
2 - 4	70,537	20.2	88,346	22.9	60,030	21.8	71,833	23.8
4 - 6	46,421	13.3	65,120	16.9	32,134	11.7	41,749	13.8
Over 6	39,914	11.4	63,320	16.4	32,575	11.8	49,590	16.4
Total	348,767	100.0%	386,123	100.0%	275,334	100.0%	302,033	100.0%

Q77 = Q78 + Q79 + Q80 + Q81 + Q82

Table 23

Age Distribution of Outstanding Exception Items
by the Microfilming Method
(Average Reporting Banks)

Dollars Outstanding

Months Outstanding	After Reader/Sorter Processing				Before Reader/Sorter Processing				During Reader/Sorter Processing			
	1981 Dollars	1982 Dollars	1981 Percent	1982 Percent	1981 Dollars	1982 Dollars	1981 Percent	1982 Percent	1981 Dollars	1982 Dollars	1981 Percent	1982 Percent
0 - 1	$2,479,202	$ 833,657	69%	77%	$486,878	$1,559,068	75%	80%	$4,014,921	$3,554,375	70%	80%
1 - 2	813,553	85,793	23	8	65,636	8,883	10	10	1,137,824	453,831	20	10
2 - 4	239,532	130,929	6	12	58,571	17,660	9	6	369,207	242,364	6	6
4 - 6	23,729	19,152	1	2	16,823	5,513	3	2	86,944	96,090	2	2
Over 6	19,980	16,282	1	1	20,176	11,391	3	2	125,049	72,038	2	2
Total	$3,575,996	$1,085,813	100%	100%	648,084	$1,602,515	100%	100%	$5,733,945	$4,418,698	100%	100%

Items Outstanding

Months Outstanding	After Reader/Sorter Processing				Before Reader/Sorter Processing				During Reader/Sorter Processing			
	1981 Items	1982 Items	1981 Percent	1982 Percent	1981 Items	1982 Items	1981 Percent	1982 Percent	1981 Items	1982 Items	1981 Percent	1982 Percent
0 - 1	590	669	44%	64%	153	220	34%	45%	722	494	34%	26%
1 - 2	380	236	29	23	77	93	17	19	466	467	22	25
2 - 4	282	68	21	7	81	92	18	18	394	517	19	28
4 - 6	35	36	3	3	76	53	17	11	229	281	11	15
Over 6	38	29	3	3	59	33	13	7	292	116	14	6
Total	1,325	1,038	100%	100%	446	491	100%	100%	2,103	1,875	100%	100%

Table 24

A Comparison of Balancing Policy and Experience

Balancing Procedures

	1979	1980	1981	1982
Always balance	5%	4%	3%	3%
Attempt to balance	78	85	85	80
Very seldom balance	17	11	12	17

Exception Item Growth

	1979	1980	1981	1982
Grown	67%	56%	49%	28%
Remained the same	26	25	27	32
Decreased	7	19	24	40

Adjustment Staff Size

		Number of People		
	138 Banks	1981	1982	Percent Gain or Loss
Grown	24%	829	957	+15.4%
Remained the same	46	807	809	+ 0.2
Decreased	30	1,690	1,525	- 9.8
Total	100%	3,326	3,291	-1.05%

continues consistent with past years, as most banks deal with costly float by shipping items before balancing and rely on control procedures to assist the balancer after the items have left the bank. Bankers' perceptions concerning exception item growth seem to be verified by the data; some volumes are still high, however there are notable improvements since last year. The detailed analysis of the adjustment staff size reveals that 24% of the responding banks increased staff levels by 15.4% on average, while 30% of the banks decreased staff levels by 9.8% on average. The net effect for 138 reporting banks is a reduction by 35 persons from their 1981 adjustment staff complement. Adjustment staff levels had risen by 5.2% in 1980 and by 7.3% in 1979.

Transit Holdover

Definition: Items in transit holdover are those items that were received by a bank before a deadline but were not processed by high- or low-speed systems in time to be sent for collection. These items would result in a loss of float to the bank but not to its customers.

Transit holdover reflects the speed with which checks are collected. Therefore, it is an important measure of a bank's processing efficiency. In 1982, the average transit holdover rate increased slightly from 1.4% of transit items processed in 1981, to an average rate of 1.6% in 1982. This figure was 9.4% in 1973. The average dollar amount of each item held over dropped significantly from $781 reported in 1981 to the lowest average dollar level reported for transit holdover — $408. The median dollar value decreased 13.6% to $413 (Table 25).

A better perspective of banker concern about transit holdover can be obtained from Table 26. While the median rate continues at 0.2%, 75.1% of 1982 reporting banks had a transit holdover rate less than 1%. This emphasis on the timely processing of high-dollar checks must continue, since greater efforts by the Federal Reserve to squeeze float from the check collection system are continuing.

Table 25

Transit Holdover by Area
(Percent of Total Transit Items)

Area	ADL Banks 1979	1980	1981	1982	All Banks 1979	1980	1981	1982
Boston	1.2%	3.6%	0.7%	0.6%	0.1%	1.1%	0.2%	0.1%
New York	5.1	6.2	3.7	4.2	2.0	2.5	2.4	2.6
Philadelphia	0.0	0.5	1.3	0.5	2.0	1.5	0.3	0.1
Pittsburgh	2.7	2.1	1.7	2.5	1.6	1.3	1.0	2.0
Washington, D.C.	0.0	*	0.4	0.1	1.9	0.9	0.7	0.4
Atlanta	4.5	2.2	0.4	1.1	5.8	2.9	5.4	2.0
Chicago	3.3	2.1	0.5	1.7	4.7	1.4	1.1	2.8
Cleveland	0.7	0.6	0.3	0.7	1.6	0.5	1.3	0.6
Detroit	1.4	1.1	2.0	0.9	1.1	0.7	0.4	9.6
Minneapolis/St. Paul	*	*	*	*	*	*	0.8	0.8
St. Louis	1.5	1.2	2.1	0.9	2.9	2.3	1.7	1.2
Dallas	0.1	0.2	0.1	0.4	0.5	1.0	6.0	4.6
Houston	1.7	0.1	*	0.3	7.3	3.3	2.4	2.4
Los Angeles	0.9	3.1	*	0.2	0.4	1.4	1.2	0.5
San Francisco	0.7	0.8	0.2	0.1	1.3	1.9	0.4	0.4
Denver	1.1	0.5	*	*	0.5	0.2	0.4	0.6
Total banks	30	36	32	38	153	170	152	169
Average	2.2%	2.3%	1.0%	1.4%	2.5%	1.9%	1.4%	1.6%

	1979	1980	1981	1982
Average dollar value of item held over	$661	$678	$781	$408
Median dollar value of item held over	$430	$551	$478	$413

*No respondents.

$$\frac{Q11}{Q10 + Q11} \times 100$$

Table 26

Distribution of the Transit Holdover Rate
(Percent of Total Transit Items)

	ADL Banks				All Banks			
Rate	1979	1980	1981	1982	1979	1980	1981	1982
0% - 1%	14	20	20	27	93	112	105	127
1% - 2%	5	4	6	6	19	21	19	17
2% - 3%	2	3	2	2	9	13	5	7
3% - 4%	3	2	2	0	6	7	4	6
4% - 5%	1	1	1	0	3	3	7	0
5% - 10%	4	5	1	2	14	7	7	4
10% - 15%	1	1	0	1	5	2	2	4
15% - 20%	0	0	0	0	1	2	0	2
20% - 30%	0	0	0	0	1	3	1	0
Over 30%	0	0	0	0	2	0	2	2
Total banks	43	30	36	38	153	170	152	169
Average	2.2%	2.3%	1.0%	1.4%	2.5%	1.9%	1.4%	1.6%
Median	1.2%	0.8%	0.4%	0.3%	0.5%	0.3%	0.2%	0.2%

$$\frac{Q11}{Q10 + Q11} \times 100$$

This section on check processing productivity presents an analysis of data gathered concerning the distribution of manpower according to the following major task groupings:

- Data control (balancing and correction).
- Encoding operations.
- Check receiving operations.
- Reader/sorter operations.
- Cash letter make-up.
- Microfilming operations.
- On-us processing and return item processing.
- Exception item processing.
- Bulk filing.

The labor data reported were generally comprehensive. The problem of rounding off was eliminated by requesting the actual item count. Productive man-hours rather than man-days provided a more uniform base. Both the average (arithmetic mean) and median (midpoint value) of the distributions were made.* Caution should be exercised when comparisons are made between the following data and individual bank distributions.

Labor Intensiveness

The average total productivity of the 134 reporting banks for the combined check processing tasks climbed 25.7% in 1982 to 693.3 items processed per man-hour from 551.6 items processed per man-hour in 1981 (Table 27). The 1982 median rate improved by 13.6% to 692.6 items per man-hour, from 609.8 items in 1981.

Table 28 presents the total productivity by geographic area. Between 1981 and 1982, for all reporting banks, 15 of 16 areas reported an increase in overall labor productivity. The San Francisco area banks replaced the Pittsburgh banks with the highest productivity average, while substantial gains were reported by the Houston, Denver, Detroit, and Cleveland area banks.

*The median, by definition, is unaffected by extreme values and is useful as a measure of central tendencies when extreme values are present.

Table 27

Overall Labor Productivity

Checks per Man-Hour	Number of Banks 1979	1980	1981	1982
Under 300	16	15	6	3
300 - 400	37	31	14	12
400 - 500	27	24	20	16
500 - 750	71	88	37	53
750 - 1,000	*	*	22	30
1,000 - 1,250	*	*	4	13
Over 1,250	*	*	2	7
Total banks	151	158	105	134
Average	530.0	524.6	551.6	693.3
Median	490.3	522.7	609.8	692.6

*No comparable data collected.

$$\frac{Q16}{\text{Sum of Q47 through Q69}}$$

Table 28

Overall Labor Productivity by Area

Area	ADL Banks 1979	1980	1981	1982	All Banks 1979	1980	1981	1982
Boston	722.4	534.3	625.0	738.7	566.1	559.1	680.1	689.0
New York	397.0	500.0	495.6	573.5	392.7	551.6	536.8	592.2
Philadelphia	332.5	963.4	829.7	1201.9	587.7	465.1	612.4	735.0
Pittsburgh	604.6	785.1	832.4	931.4	661.5	771.2	788.3	974.8
Washington, D.C.	460.0	571.9	*	670.4	522.0	565.5	690.7	769.7
Atlanta	541.9	677.0	863.9	636.1	513.0	567.9	723.7	658.3
Chicago	376.1	486.5	519.1	657.7	548.1	505.2	584.9	662.3
Cleveland	437.7	402.1	474.0	757.4	480.3	517.5	493.0	700.6
Detroit	379.2	343.0	449.1	535.6	529.5	488.3	456.4	702.1
Minneapolis/St. Paul	*	*	*	*	*	*	733.3	874.9
St. Louis	626.5	624.4	609.8	701.5	542.4	613.3	689.7	797.4
Dallas	723.2	658.9	1219.6	785.4	628.6	602.3	739.7	755.4
Houston	677.9	587.6	803.5	1288.0	492.5	462.2	486.7	909.9
Los Angeles	544.3	570.6	*	414.3	641.6	634.0	529.5	595.7
San Francisco	618.0	664.9	585.3	875.9	508.4	670.9	727.7	1042.4
Denver	495.6	749.9	400.1	700.8	516.9	624.8	414.2	769.8
Total banks	30	35	23	30	151	158	105	134
Average	514.7	506.8	521.2	688.0	530.0	524.6	551.6	693.3
Median	529.0	570.6	636.5	711.7	490.3	522.7	609.8	692.6

*No respondents

$$\frac{\text{Q16}}{\text{Sum of Q47 through Q69}}$$

Labor Distribution

A distribution of the percentage of labor among various tasks performed is shown in Table 29. In order to examine the productivity of certain elements of the check processing operation more closely, two new tasks were added to the 1980 survey: check receiving (Task C) and bulk filing (Task H). From the data it can be seen that as productivity gains are achieved in data control balancing and correction (Task A) and encoding operations (Task B), other functions — check receiving (Task C), on-us processing and return item processing (Task F), and exception item processing (Task G) — show increased percentages of total labor used in the check processing operation from 1981 to 1982.

Table 29
Distribution of Labor by Overall Labor Productivity

Checks per Man-Hour*	Number of Banks	Percent of Labor by Tasks** A	B	C	D	E	F	G	H	I
Under 300	3	21.3	40.0	2.9	3.2	4.1	24.5	1.1	-	3.0
300 - 400	12	16.5	29.4	10.3	3.0	6.4	22.6	5.2	0.9	5.7
400 - 500	16	17.9	26.3	7.4	3.8	6.8	23.4	7.6	1.6	5.3
500 - 750	53	16.7	27.8	5.9	3.8	7.3	21.3	7.5	2.7	7.0
750 - 1,000	30	13.7	28.0	8.8	4.6	7.5	19.4	9.7	3.1	5.2
1,000 - 1,250	13	14.8	36.3	5.9	3.4	7.0	17.6	10.1	3.2	1.5
1,250 - 1,500	2	18.0	33.8	5.4	6.8	17.1	14.4	4.5	0.1	-
Over 1,500	5	14.4	34.0	8.2	3.2	10.7	19.8	7.6	0.8	1.3
Average, all banks 1982	134	15.7	25.4	7.3	4.3	7.0	23.1	7.4	1.8	8.0
Average, all banks 1981	105	17.2	28.8	5.7	4.0	6.8	21.3	6.5	1.6	8.1
Average, all banks 1980	158	18.3	26.2	4.5	4.5	6.9	22.7	6.6	3.2	7.0
Average, all banks 1979	151	18.4	30.4	-	4.2	7.5	27.9	6.6	-	5.0
ADL 1982	30	15.8	18.9	6.9	4.3	6.9	27.2	7.1	1.3	11.6
ADL 1981	23	18.6	28.9	5.3	3.8	6.1	20.3	5.8	1.3	9.9
ADL 1980	35	19.9	21.7	5.2	4.9	6.7	20.8	6.9	2.9	11.0
ADL 1979	30	23.3	25.7	-	4.8	7.8	22.6	9.0	-	6.7

* $\frac{\text{Q16}}{\text{Sum of Q47 through Q69}}$; -No comparable data collected.

** Tasks

A. Data control balancing and correction $\frac{\text{Q49 + Q50}}{\text{Sum of Q47 through Q69}} \times 100$

B. Encoding operations $\frac{\text{Q51 + Q52 + Q55 + Q56}}{\text{Sum of Q47 through Q69}} \times 100$

C. Check receiving $\frac{\text{Q53 + Q54}}{\text{Sum of Q47 through Q69}} \times 100$

D. Reader/sorter operations $\frac{\text{Q57 + Q58}}{\text{Sum of Q47 through Q69}} \times 100$

E. Cash letter make-up and microfilming operations $\frac{\text{Q59 + Q60 + Q61 + Q62}}{\text{Sum of Q47 through Q69}} \times 100$

F. On-us processing and return item processing $\frac{\text{Q63 + Q64 + Q67 + Q68}}{\text{Sum of Q47 through Q69}} \times 100$

G. Exception item processing $\frac{\text{Q47 + Q48}}{\text{Sum of Q47 through Q69}} \times 100$

H. Bulk filing $\frac{\text{Q65 + Q66}}{\text{Sum of Q47 through Q69}} \times 100$

I. Non-officer processing time not including "A" through "H" tasks $\frac{\text{Q69}}{\text{Sum of Q47 through Q69}} \times 100$

Data Control — Balancing and Correction

In 1982, both the average and median rates for labor productivity in the balancing and correction functions increased over 1981 (Table 30). The average number of checks processed per man-hour in 1982 was 4,651.0, an increase of 44.5% from 1981, while the median number of checks processed per man-hour in 1982 was 4,782.1, an increase of 12.5% from 1981. The implementation of automation in this area has contributed to a greater than 89% increase in productivity, on average, since 1979.

Table 30

Balancing and Correction Labor Productivity

Checks per Man-Hour	1979	1980	1981	1982
Under 1,000	9	5	7	4
1,000 - 2,000	24	27	15	11
2,000 - 3,000	47	37	23	20
3,000 - 4,000	23	21	20	31
4,000 - 5,000	12	21	23	18
5,000 - 6,000	2	13	11	16
6,000 - 7,000	5	9	8	8
7,000 - 8,000	5	6	9	8
8,000 - 9,000	24	28	3	8
9,000 - 10,000	*	*	2	3
10,000 - 15,000	*	*	14	14
Over 15,000	*	*	12	19
Total banks	151	167	147	160
Average	2,455.9	2,880.4	3,218.2	4,651.0
Median	2,894.6	3,556.5	4,250.0	4,782.1
				Q9 / Q49 + Q50

*No comparable data collected.

Encoding Operations

Table 31 presents the combined average labor productivity for single-pocket and multipocket encoding machines. The 1982 average number of items encoded per man-hour was 988.4, a 12.9% increase over the 1981 rate of 875.6 items. The median rate improved even more favorably over 1981, with an increase of 15.0% over the 1981 mark of 880.5 items encoded per man-hour. Certainly, some portion of this increased productivity must be attributed to more widespread use of incentive programs for encoding operators.

Table 31

Encoding Labor Productivity

	Number of Banks			
Checks per Man-Hour	1979	1980	1981	1982
Under 600	25	19	12	9
600 - 700	24	15	14	6
700 - 800	23	26	17	18
800 - 900	31	27	34	15
900 - 1,000	17	27	21	25
1,000 - 1,100	31	51	13	17
1,100 - 1,200	*	*	12	20
1,200 - 1,300	*	*	5	11
1,300 - 1,400	*	*	3	9
1,400 - 1,500	*	*	6	9
Over 1,500	*	*	11	14
Total banks	151	165	149	153
Average	859.1	864.7	875.6	988.4
Median	815.8	878.7	880.5	1,012.2

$$\frac{Q3 + Q4 + Q5 + Q6}{Q51 + Q52 + Q55 + Q56}$$

*No comparable data collected.

Tables 32 and 33 show the encoding productivity for single-pocket and multipocket machines. The average number of items encoded on a single-pocket machine was 1,002.7 items per man-hour, an increase of 9.0% from the 919.7 items per man-hour reported in 1981; however, the 1977 figure for single-pocket proof machine productivity was 929.6 items per man-hour. The median rate of encoding labor productivity on single-pocket machines increased 12.0% from 1981 to 1,023.2 items per man-hour. The average rate for encoding labor productivity on multipocket machines rose 18.5% from 1981 to 908.2 items per man-hour, while the median rate improved 5.0% to 764.1 items.

Table 32

Encoding Labor Productivity for the Single-Pocket Machine

	Number of Banks			
Checks per Man-Hour	1979	1980	1981	1982
Under 600	15	18	12	9
600 - 700	24	9	11	5
700 - 800	19	27	13	15
800 - 900	27	25	33	17
900 - 1,000	16	25	21	26
1,000 - 1,100	16	17	13	17
1,100 - 1,200	4	14	12	22
1,200 - 1,300	14	20	8	12
1,300 - 1,400	*	*	3	9
1,400 - 1,500	*	*	5	8
Over 1,500	*	*	12	14
Total banks	135	155	143	154
Average	881.4	863.9	919.7	1,002.7
Median	349.1	891.5	913.7	1,023.2
				$\frac{Q3 + Q4}{Q51 + Q52}$

*No comparable data collected.

Table 33

Encoding Labor Productivity for the Multipocket Machine

Checks per Man-Hour	Number of Banks			
	1979	1980	1981	1982
0 - 100	3	3	3	3
100 - 200	4	6	2	3
200 - 300	5	4	2	4
300 - 400	6	5	2	4
400 - 500	3	6	9	3
500 - 600	4	9	3	6
600 - 700	6	6	3	4
700 - 800	9	7	10	7
800 - 900	8	7	7	7
900 - 1,000	0	4	4	7
1,000 - 1,100	1	1	2	4
1,100 - 1,200	1	2	2	4
Over 1,200	2	8	8	5
Total banks	52	68	57	61
Average	627.8	685.4	766.7	908.2
Median	610.2	616.2	727.7	764.1
				$\frac{Q5 + Q6}{Q55 + Q56}$

Table 34 shows the number of items encoded per man-hour by the percent of pre-encoded items received. In 1982, an interesting reversal in trend was noted. In the past, the banks that received the highest percentage of encoded items reported the lowest encoding productivity. This year's data show, for the first time ever, a consistent pattern of productivity. This consistency may be emerging as the result of the implementation of incentive programs throughout the industry. The growth in the percentage of banks receiving 80-100% of encoded incoming items continued in 1982, with 25 institutions now listed in this category, a 127% increase since 1979.

Table 34

Items Encoded per Man-Hour by Percent of Pre-encoded Items

Percent of Incoming Items Already Encoded*	Number of Banks				Items Encoded per Man-Hour+			
	1979	1980	1981	1982	1979	1980	1981	1982
80% - 100%	11	16	19	25	652.2	776.0	818.5	1,067.5
60% - 80%	36	40	38	45	788.6	955.4	979.7	1,052.2
40% - 60%	52	60	58	67	868.5	1,040.7	1,412.7	1,045.6
0% - 40%	52	49	34	28	943.1	885.0	1,496.8	1,064.2
Total banks	151	165	149	165				
Average productivity					859.1	864.7	875.6	983.3

* $\frac{Q1 + Q2}{Q9} \times 100$

+ $\frac{Q3 + Q4 + Q5 + Q6}{Q51 + Q52 + Q55 + Q56}$

Check Receiving Operations

Table 35 shows the productivity figures for the check receiving function. These operational data were surveyed for the first time in 1980. The average number of checks processed per man-hour was 9,358.6, while the median number reported was 12,331.2. In many cases, check receiving departments initially handle both encoded and unencoded deposits and then forward the work to either the encoding or the reader/sorter job stream. Banks receiving larger percentages of pre-encoded work should be achieving greater productivity in the check receiving operation, because some of the preparation work of batch headers and deposit tickets has been accomplished by the depositor.

Table 35

Check Receiving Productivity (Pre-encoded Deposits)

Checks per Man-Hour	Number of Banks 1980	1981	1982
Under 5,000	41	27	30
5,000 - 10,000	44	30	34
10,000 - 15,000	34	21	31
15,000 - 20,000	11	30	22
20,000 - 25,000	12	9	12
25,000 - 30,000	3	7	10
Over 30,000	18	25	25
Total banks	163	149	164
Average	6,518.6	8,969.9	9,358.6
Median	9,112.7	14,331.3	12,331.2

$$\frac{Q9}{Q53 + Q54}$$

Reader/Sorter Operations

Average reader/sorter labor productivity improved for the third consecutive year. The average rate increased 20.6% to 15,733.8 checks processed per man-hour (Table 36), while the median rate climbed 23.9% to 21,720.2. Of the reporting banks, 84% processed over 10,000 items per man-hour and 11% processed more than 50,000 items per man-hour.

Table 36

Reader/Sorter Labor Productivity

Checks per Man-Hour	Number of Banks 1979	1980	1981	1982
Under - 5,000	17	18	11	6
5,000 - 10,000	28	29	29	20
10,000 - 15,000	25	14	22	24
15,000 - 20,000	12	22	24	27
20,000 - 25,000	12	13	12	21
25,000 - 30,000	19	18	12	15
30,000 - 35,000	38	52	5	9
35,000 - 40,000	*	*	7	11
40,000 - 45,000	*	*	6	7
45,000 - 50,000	*	*	6	6
50,000 - 75,000	*	*	13	12
Over 75,000	*	*	5	6
Total banks	151	166	152	164
Average	12,526.9	11,740.3	13,044.3	15,733.8
Median	16,675.1	19,917.3	17,531.5	21,720.2
				$\frac{Q7}{Q57 + Q58}$

*No comparable data collected.

Cash Letter Make-Up and Microfilming

Combined cash letter make-up and microfilming labor productivity is shown in Table 37. The average rate of items processed per man-hour increased by 9.5% to 6,802.8, while the median rate rose by 11.6% to 7,919.2.

Separate tables are shown for cash letter make-up (Table 38) and microfilming (Table 39). Both the average and the median rates for cash letter make-up productivity improved in 1982. The average rate climbed significantly by 20.1% to 6,532 items per man-hour, while the median rate rose 13.8% to 7,659.4 items per man-hour. These figures show that cash letter make-up productivity has only returned to levels that existed before the implementation of Fed pricing. In many cases, it takes about the same amount of time to prepare a cash letter with relatively few items as it does to prepare a larger cash letter. The average number of items microfilmed per man-hour increased from 8,970.5 items per man-hour in 1981 to 9,441.7 items in 1982. The median rate, however, decreased again in 1982 to 5,868.6 items per man-hour from the 1981 rate of 6,639.3 items.

Table 37

Cash Letter Make-Up and Microfilming Labor Productivity

Checks per Man-Hour	Number of Banks 1979	1980	1981	1982
Under 2,000	7	5	6	3
2,000 - 3,000	5	10	15	6
3,000 - 4,000	10	10	11	12
4,000 - 5,000	11	18	11	15
5,000 - 6,000	13	12	12	17
6,000 - 7,000	9	12	14	9
7,000 - 8,000	13	13	8	17
8,000 - 9,000	12	10	7	19
9,000 - 10,000	10	13	11	6
10,000 - 11,000	-	-	-	9
11,000 - 12,000	62	64	15	7
12,000 - 15,000	*	*	6	17
15,000 - 20,000	*	*	9	7
Over 20,000	*	*	14	11
Total banks	152	167	139	155
Average	6,261.0	6,323.3	6,214.8	6,802.8
Median	8,612.8	8,203.5	7,096.6	7,919.2

$$\frac{Q10 + Q11 + Q20 + Q21}{Q59 + Q60 + Q61 + Q62}$$

*No comparable data collected.

Table 38

Cash Letter Make-Up Labor Productivity

Checks per Man-Hour	ADL Banks 1979	1980	1981	1982	All Banks 1979	1980	1981	1982
Under 2,000	1	1	1	0	11	8	7	4
2,000 - 4,000	5	8	6	4	26	28	30	24
4,000 - 6,000	7	9	8	10	22	29	26	34
6,000 - 8,000	7	4	2	7	21	23	20	26
8,000 - 10,000	6	6	4	6	20	24	19	22
10,000 - 12,000	0	1	2	4	12	15	13	18
12,000 - 15,000	2	4	4	5	12	10	8	17
15,000 - 20,000	2	3	2	1	28	32	11	7
Over 20,000	*	*	2	1	*	*	13	14
Total banks	30	36	31	38	152	169	147	166
Average	4,966.5	5,191.9	5,579.5	6,880.6	5,556.6	5,768.3	5,438.6	6,532.0
Median	6,495.7	6.004.4	6,349.3	7,259.0	7,514.7	7,717.9	6,732.7	7,659.4
								$\frac{Q10 + Q11}{Q59 + Q60}$

*No comparable data collected.

Table 39
Microfilming Labor Productivity

Checks per Man-Hour	ADL Banks 1979	1980	1981	1982	All Banks 1979	1980	1981	1982
Under 2,000	5	6	6	5	20	28	23	23
2,000 - 4,000	3	5	7	7	16	14	19	22
4,000 - 6,000	3	2	4	4	15	12	14	16
6,000 - 8,000	4	1	0	1	11	11	15	4
8,000 - 10,000	2	5	0	0	13	14	7	11
10,000 - 12,000	0	1	2	3	12	11	11	8
12,000 - 15,000	1	1	2	2	12	14	8	9
15,000 - 18,000	7	7	0	2	35	39	3	7
18,000 - 21,000	*	*	2	2	*	*	5	5
21,000 - 30,000	*	*	0	1	*	*	5	9
30,000 - 50,000	*	*	1	0	*	*	4	2
Over 50,000	*	*	0	2	*	*	5	5
Total banks	25	28	24	29	134	143	119	121
Average	14,439.7	9,132.2	6,727.3	11,342.6	12,609.1	7,933.1	8,970.5	9,441.7
Median	6,358.0	8,133.1	4,508.5	5,418.2	8,790.3	8,924.2	6,639.3	5,868.6
								$\frac{Q20 + Q21}{Q61 + Q62}$

*No comparable data collected.

On-Us Processing — Labor Productivity

Table 40 has been revised this year to yield a more interesting statistic — the productivity of the paying and filing operation. The data suggest a wide range of industry procedures. While some banks seem to review each item carefully, others have streamlined the process so that more than 13% of the respondents reported productivity levels greater than 10,000 checks paid and filed per man-hour, with an average of only 1,496.8. Table 41 analyzes the relationship between labor productivity for on-us processing and the percentage of on-us items received by the bank. The percentage of banks that have less than 20% of their total received items processed as on-us increased from 31.7% in 1981 to 37.2% in 1982.

Bulk Filing Labor

Bulk filing productivity was measured for the first time in the 1981 survey. Due to the variance in the number of accounts subject to bulk filing at the different banks, there is a wide range of man-hours devoted to these tasks. The average productivity increased by 34.7% from 4,423.5 items filed per man-hour in 1981 to 5,958.9 items in 1982, while the median value improved 29.7% from 5,232.4 items filed per man-hour in 1981 to 6,786.4 items in 1982 (Table 42).

Table 40

On-Us Processing Labor Productivity

Checks per Man-Hour	Number of Banks 1982
Under 400	11
400 - 500	5
500 - 600	7
600 - 700	8
700 - 800	9
800 - 900	9
900 - 1,000	7
1,000 - 1,250	13
1,250 - 1,500	12
1,500 - 1,750	7
1,750 - 2,000	6
2,000 - 3,000	12
3,000 - 4,000	8
4,000 - 5,000	4
5,000 - 10,000	8
10,000 - 15,000	5
15,000 - 20,000	5
20,000 - 25,000	2
Over 25,000	7
Total banks	145
Average	1,496.8
Median	1,310.9

$$\frac{Q12 + Q13 + Q14}{Q63 + Q64}$$

Table 41

Percent of On-Us Items Received
and
On-Us Processing Labor Productivity

Percent of On-Us Items Received*	Number of Banks 1982	Checks Processed per Man-Hour+ 1982
Under 10%	15	810.7
10% - 20%	39	4,296.7
20% - 30%	28	2,534.6
30% - 40%	28	19,751.4
40% - 50%	16	51,937.9
50% - 60%	10	2,300.1
60% - 70%	7	1,396.6
Over 70%	2	43,318.0
Total banks	145	
Average productivity		1,496.8

*$\frac{Q12 + Q13 + Q14}{Q16} \times 100$

+Average within each percentage group. $\frac{Q12 + Q13 + Q14}{Q63 + Q64}$

Table 42

Bulk Filing Labor Productivity

Checks per Man-Hour	Number of Banks 1981	1982
Under 1,500	9	8
1,500 - 3,000	15	22
3,000 - 4,500	9	9
4,500 - 10,000	16	26
10,000 - 25,000	8	17
25,000 - 50,000	7	9
50,000 - 100,000	5	11
Over 100,000	3	6
Total banks	72	108
Average	4,423.5	5,958.9
Median	5,232.4	6,786.4

$$\frac{Q15}{Q65 + Q66}$$

Exception and Return Item Processing

As shown in Table 43, the average and median productivity rates in the exception and return item processing area improved in 1982. The average rate increased 12.2% to 26.7 items, while the median rate climbed 15.3% to 24.8 items per man-hour. Nevertheless, the industry has not yet reached the best efforts it attained in 1979.

Table 44 reveals that the disappointing trend in return item productivity continued for another year, although the average productivity rose by 16.6% to 56.2 items processed per man-hour, while median return item labor productivity increased from 43.6 items per man-hour in 1981 to 53.5 items in 1982. Productivity levels for return items can be expected to improve when this labor-intensive operation becomes fully automated. Some banks have implemented systems that improve the productivity of certain portions of return item processing; however, much greater benefit will be realized when the major clearing banks adopt the endorsement standard.

Table 45 presents an analysis of the number of items resolved per man-hour compared to the exception and return items discovered. Table 46 shows a slight drop in the consistent trend of resolving about three exception items per man-hour, on average.

Table 43

Exception and Return Item Productivity

Items per Man-Hour	ADL Banks 1979	1980	1981	1982	All Banks 1979	1980	1981	1982
Under 10	1	0	0	1	18	17	13	15
10 - 15	2	4	4	4	16	19	24	23
15 - 20	4	5	4	4	19	27	21	22
20 - 25	4	5	1	3	16	23	18	19
25 - 30	2	6	4	8	11	20	13	20
30 - 35	7	3	6	2	20	16	13	9
35 - 40	1	2	6	4	11	8	13	13
40 - 45	6	4	0	4	12	10	3	9
45 - 50	1	2	2	2	5	5	3	6
50 - 100	0	3	3	5	7	13	10	16
Over 100	2	2	0	1	8	6	2	4
Total banks	30	36	30	38	143	164	133	156
Average	36.3	29.1	28.1	32.5	34.4	26.5	23.8	26.7
Median	29.9	28.4	31.6	29.7	27.8	23.8	21.5	24.8

$$\frac{Q18 + Q43 + Q44}{Q47 + Q48 + Q67 + Q68}$$

Table 44

Return Item Productivity

Items per Man-Hour	ADL Banks 1979	1980	1981	1982	All Banks 1979	1980	1981	1982
Under 15	1	0	1	1	12	15	14	15
15 - 20	0	0	0	1	5	4	8	7
20 - 25	1	1	2	3	12	14	10	13
25 - 30	0	3	2	0	8	17	10	8
30 - 35	1	1	2	0	13	10	13	5
35 - 40	1	1	0	1	7	8	13	12
40 - 45	1	1	2	2	11	9	5	6
45 - 50	4	3	0	2	6	8	6	8
50 - 65	16	20	4	9	45	52	19	29
65 - 80	5	6	10	5	26	29	15	14
80 - 100	*	*	5	3	*	*	13	11
100 - 120	*	*	0	4	*	*	1	10
120 - 200	*	*	2	3	*	*	7	6
Over 200	*	*	0	4	*	*	7	14
Total banks	30	36	30	38	145	166	141	158
Average	78.1	68.4	61.4	78.2	84.8	53.9	48.2	56.2
Median	61.6	64.4	69.1	65.6	48.7	47.4	43.6	53.5

$$\frac{Q18}{Q67 + Q68}$$

*No comparable data collected.

Table 45

Exception and Return Item Productivity
by Rate Discovered

Exception Item Rate per 100,000 Items Sent*	Number of Banks				Items Resolved per Man-Hour+			
	1979	1980	1981	1982	1979	1980	1981	1982
0 - 500	7	8	8	13	41.2	29.2	11.6	12.6
500 - 1,000	62	76	77	87	30.0	27.3	23.2	30.2
1,000 - 1,500	39	55	31	42	30.5	32.7	40.6	31.6
1,500 - 2,000	18	17	8	7	45.1	34.8	34.7	43.2
2,000 - 2,500	9	5	4	4	52.6	77.8	34.9	28.1
2,500 - 3,000	3	2	1	1	38.5	39.1	39.0	39.7
Over 3,000	5	0	4	1	37.5	*	29.5	66.5
Total banks	143	163	133	156				
Average					34.4	26.3	23.8	26.7
Median					27.8	23.7	21.5	24.7

*$\frac{Q18 + Q43}{Q10}$ X 100,000

+ $\frac{Q18 + Q43 + Q44}{Q47 + Q48 + Q67 + Q68}$

Table 46

Exception Item Productivity

Items per Man-Hour	ADL Banks 1979	1980	1981	1982	All Banks 1979	1980	1981	1982
0- 2	10	13	8	10	54	55	41	54
2- 3	4	6	5	8	21	30	23	30
3- 4	5	2	4	3	18	18	21	16
4- 5	4	2	4	3	10	11	8	10
5-10	5	8	6	8	26	29	23	32
10-15	0	2	3	4	7	6	9	13
15-20	0	2	1	1	1	4	4	2
Over 20	2	1	0	1	13	14	12	8
Total banks	30	36	3	38	150	167	141	165
Average	2.7	3.2	3.3	2.9	2.9	3.1	3.1	2.8
Median	3.2	2.9	3.6	3.0	3.0	3.0	3.4	2.9

$$\frac{Q43 + Q44}{Q47 + Q48}$$

Automated Reject Processing Productivity

In 1982, 72.3% of the respondent banks reported automated reject processing capabilities. The productivity experienced by the 123 reporting banks in the automated reject processing area is shown in Table 47. The average productivity increased 11.3% to 276.4 items per man-hour, while the median rate increased slightly to 346.9 items per man-hour. It should be understood that the productivity rates given reflect the processing of other rejects by manual methods; however, higher productivity rates achieved in 1979 have not yet been reached. Table 48 illustrates that no significant changes have occurred in the productivity distribution for banks that employ automated reject processing.

Table 47

Reject Processing Productivity by Area

	ADL Banks				All Banks			
Area	1979	1980	1981	1982	1979	1980	1981	1982
Boston	471.8	255.2	534.9	353.8	586.1	345.9	576.6	399.7
New York	375.0	236.3	309.6	438.9	439.5	375.6	443.5	488.9
Philadelphia	*	203.7	776.8	399.7	408.8	397.0	549.2	441.3
Pittsburgh	507.9	737.2	737.3	719.8	527.6	737.2	737.3	719.8
Washington, D.C.	*	*	165.3	234.5	335.3	383.7	394.8	445.9
Atlanta	299.6	358.1	377.3	183.2	290.1	554.6	465.7	383.8
Chicago	1,100.0	333.9	545.0	567.8	881.4	355.1	432.7	321.5
Cleveland	*	158.9	160.1	224.3	880.3	281.7	287.2	279.9
Detroit	304.2	429.4	352.6	515.1	461.0	369.7	476.4	720.9
Minneapolis/St. Paul	*	*	443.9	1,053.4	*	*	478.9	626.4
St. Louis	*	374.2	129.8	227.0	500.7	439.3	493.9	324.8
Dallas	298.6	669.8	237.5	362.1	298.6	477.6	209.6	447.6
Houston	341.0	290.3	241.3	401.9	475.5	610.1	304.7	477.5
Los Angeles	305.5	489.7	*	2,761.8	824.3	962.9	326.6	937.7
San Francisco	211.9	190.8	441.2	159.7	350.1	365.1	371.4	238.8
Denver	*	500.6	851.2	512.7	399.1	641.4	518.0	354.8
Total banks	18	25	28	33	68	110	101	123
Average	282.0	315.5	234.5	263.2	308.6	307.9	248.3	276.4
Median	299.5	323.6	322.2	312.8	395.1	357.2	342.8	346.9

*No respondents.

$\frac{Q99}{Q100}$

Table 48

Reject Processing Productivity

Checks per Man-Hour	Number of Banks			
	1979	1980	1981	1982
Under 100	3	6	10	11
100 - 200	8	20	15	19
200 - 300	15	19	16	21
300 - 400	9	16	17	19
400 - 500	10	16	11	19
500 - 600	6	10	7	10
600 - 700	2	5	4	6
700 - 800	15	18	5	2
800 - 900	*	*	4	3
900 - 1,000	*	*	5	3
Over 1,000	*	*	7	10
Total banks	68	110	101	123
Average	308.6	307.9	248.3	276.4
Median	395.1	357.2	342.8	346.9
				Q99/Q100

*No comparable data collected.

Labor Productivity Summary

The "average" bank responding to the 1982 survey used approximately 3.7 less man-hours per 10,000 items processed than in 1981. The average expenditure of man-hours in check processing per 10,000 items processed has been steadily declining during the survey years because of productivity increases and technological advances. Table 48 further illustrates how productivity improvements in balancing and encoding operations impacted overall labor productivity. It is anticipated that greater productivity gains can be achieved, in the short run, by automating labor-intensive exception processing operations, a broader implementation of bulk filing, and applying advanced training techniques.

Average Man-Hour Expenditure per 10,000 Items*

Tasks	Man-Hours			
	1979	1980	1981	1982
Balancing and corrections	3.5	3.5	3.1	2.3
Encoding	5.7	5.0	5.2	3.6
Check receiving	-	0.9	1.0	1.0
Reader/sorter operations	0.8	0.9	0.7	0.6
Cash letter make-up and microfilming	1.4	1.3	1.2	1.0
On-us paying, filing, and return items processing	5.3	4.3	3.9	3.3
Exception item processing	1.0	1.3	1.2	1.1
Bulk filing	-	0.6	0.3	0.3
Miscellaneous labor	1.2	1.3	1.5	1.2
Total man-hours+	18.9	19.1	18.1	14.4

*Total man-hours times the distribution of labor from Table 29.

+10,000 items divided by the average overall productivity from Table 27.

-No comparable data collected.

Reject Reentry

Several banks have the capability of high-speed reentry of prime pass rejects under software system control. Although the rejected item should be properly merged into its appropriate place in the captured data base, some banks have experienced difficulties in the subsequent balancing operation as a result of using high-speed reject reentry.

In the 1982 survey, 77 of the reporting banks (45%) were using the system — an increase of 9% from 1981. Table 49 shows that both the average and median reject rates after high-speed reentry improved since 1981. In Table 50, the distribution of the reject rate after high-speed reentry is shown. Last year, 25% of the respondents reported that they had virtually eliminated their rejects after the high-speed operation, although some of those banks improved the situation by putting repair strips on prime pass rejects before reentry. Of the 76 respondents to question 32 in the survey, 59.2% reported that they repair their prime pass rejects before the high-speed entry run. In 1982, 29.9% of the banks reported a reject rate of 0-0.1% after high-speed reject reentry.

A bank that does not use high-speed reentry might employ other means to modify the captured data base with the required MICR line information from rejects. Some banks use CRT operators to key the information through terminals. This method of on-line reject reentry has several disadvantages, including low productivity, propensity for human error, and training time. Another problem with on-line reentry through a terminal concerns the costs of non-repair. Of the 134 respondents to question 92 in the survey, only 35.8% reported that they repair rejected items that are reentered from the first or subsequent passes. If transit reject items are not repaired, the processing bank may incur per item and/or float charges levied by the next processing institution in the check collection system. When the number of rejects has been significantly reduced by high-speed reentry, however, the disadvantages of CRT on-line reject reentry are, at least, minimized.

Table 49

Reject Rate After Reader/Sorter High-Speed
Reject Reentry by Area

	ADL Banks			All Banks		
Area	1980	1981	1982	1980	1981	1982
Boston	0.2%	0.3%	0.3%	0.1%	0.2%	0.2%
New York	1.7	1.0	0.3	1.4	0.8	0.6
Philadelphia	*	0.9	0.6	0.7	0.9	0.8
Pittsburgh	1.6	*	1.1	1.6	*	1.1
Washington, D.C.	0.9	*	*	1.0	0.4	0.6
Atlanta	1.7	*	1.0	1.0	0.9	1.1
Chicago	0.9	1.5	0.4	1.0	0.9	0.5
Cleveland	0.9	1.2	1.0	0.8	1.0	0.5
Detroit	0.7	0.3	1.0	0.4	0.1	0.3
Minneapolis/St. Paul	*	*	*	*	1.0	0.6
St. Louis	0.5	*	0.7	0.7	0.6	0.7
Dallas	*	0.9	0.7	*	0.9	1.0
Houston	0.1	*	*	0.5	1.1	0.8
Los Angeles	0.2	*	0.6	0.3	0.5	0.5
San Francisco	0.2	0.6	*	0.4	0.4	0.5
Denver	1.4	1.2	0.5	1.0	0.5	0.3
Total banks	23	17	21	68	56	77
Average	0.8%	1.0%	0.7%	0.8%	0.8%	0.6%
Median	0.8%	1.0%	0.6%	0.7%	0.7%	0.5%

*No respondents.

$\frac{Q31}{Q7} \times 100$

Table 50

Distribution of the Reject Rate After High-Speed Reject Reentry

	ADL Banks			All Banks		
Reject Rate	1980	1981	1982	1980	1981	1982
0% - 0.1%	2	2	3	11	14	23
0.1% - 0.3%	8	1	3	14	4	6
0.3% - 0.5%	0	2	4	5	6	10
0.5% - 0.8%	1	2	3	7	8	9
0.8% - 1.0%	4	1	3	10	4	9
1.0% - 1.5%	1	7	5	8	14	12
1.5% - 2.0%	4	1	0	6	5	5
2.0% - 2.5%	3	1	0	5	1	1
2.5% - 3.0%	0	0	0	2	0	2
Over 3.0%	0	0	0	0	0	0
Total banks	23	17	21	68	56	77
Average	0.8	1.0	0.7	0.8	0.8	0.6
Median	0.8	1.0	0.6	0.7	0.7	0.5

$$\frac{Q31}{Q7} \times 100$$

Tables 51 and 52 show the average number of reentered rejects from the prime pass, and from subsequent passes, respectively, according to area of the country. In Table 53, the average reject reentry productivity is given by geographic area, while Table 54 relates the productivity distribution of banks in terms of checks processed per man-hour. The average rate of reject reentry productivity decreased 5.5% to 255.9 items per man-hour, while the median rate increased 4.5% to 305.8 items per man-hour. The wide range in productivity is explained by comparing the key entry method of on-line reentry with automated reject processing.

Table 51

Average Number of Rejects Reentered from the First-Pass by Area

	All Banks		
Area	1980	1981	1982
Boston	35,326.8	23,381.9	13,117.1
New York	48,795.5	40,925.0	52,118.8
Philadelphia	18,906.7	28,702.6	18,804.6
Pittsburgh	24,792.0	26,102.5	22,980.0
Washington, D.C.	24,053.1	21,760.3	31,192.4
Atlanta	27,886.1	34,334.6	36,391.0
Chicago	30,996.0	39,406.6	45,454.3
Cleveland	37,801.1	28,955.5	33,944.3
Detroit	25,025.6	10,911.5	15,955.2
Minneapolis/St. Paul	*	6,069.0	5,529.0
St. Louis	18,523.3	21,710.3	25,321.8
Dallas	86,844.0	45,098.0	58,451.4
Houston	15,633.1	37,083.5	23,625.7
Los Angeles	59,173.9	36,448.3	101,598.8
San Francisco	59,767.4	94,456.1	50,269.5
Denver	29,711.0	31,318.3	38,351.0
Total banks	124	118	136

*No respondents.

Table 52

Average Number of Rejects Reentered
from Subsequent Passes by Area

	All Banks		
Area	1980	1981	1982
Boston	6,193.0	3,416.7	3,709.6
New York	1,202.4	262.8	2,153.9
Philadelphia	2,098.4	1,248.8	1,588.1
Pittsburgh	0.0	0.0	0.0
Washington, D.C.	0.0	885.6	400.3
Atlanta	1,634.8	5,156.6	1,628.0
Chicago	1,220.7	2,603.0	2,115.3
Cleveland	344.3	626.4	514.5
Detroit	0.0	0.0	0.0
Minneapolis/St. Paul	*	0.0	0.0
St. Louis	0.0	0.0	437.8
Dallas	0.0	0.0	172.0
Houston	5,722.5	545.3	55.3
Los Angeles	2,452.6	22.3	157.7
San Francisco	1,460.9	2,203.8	2,358.9
Denver	2,617.5	337.8	239.0
Total banks	124	118	135

*No respondents.

Table 53

Reject Reentry Productivity by Area

	All Banks		
Area	1980	1981	1982
Boston	267.3	544.7	211.1
New York	358.7	488.8	464.0
Philadelphia	303.5	315.9	312.8
Pittsburgh	219.8	320.6	474.9
Washington, D.C.	259.7	264.3	396.5
Atlanta	377.5	338.8	365.1
Chicago	729.4	322.9	368.1
Cleveland	285.2	214.0	259.4
Detroit	368.8	314.0	611.1
Minneapolis/St. Paul	*	337.2	396.4
St. Louis	207.6	251.0	344.4
Dallas	426.4	275.3	318.8
Houston	406.7	443.6	318.7
Los Angeles	426.0	471.6	557.9
San Francisco	353.3	440.2	391.2
Denver	355.4	366.7	277.1
Total banks	122	110	134
Average	195.3	270.9	255.9
Median	286.0	292.5	305.8

*No respondents.

Q90
Q91

Table 54

Reject Reentry Productivity

Checks per Man-Hour	Number of Banks 1980	1981	1982
Under 100	15	16	18
100 - 200	33	18	20
200 - 300	14	23	27
300 - 400	21	15	26
400 - 500	14	17	18
500 - 600	9	7	4
600 - 700	4	3	6
700 - 800	12	6	5
800 - 900	*	1	2
900 - 1,000	*	1	2
Over 1,000	*	3	6
Total banks	122	110	134
Average	195.3	270.9	255.9
Median	286.0	292.5	305.8
			Q90/Q91

*No comparable data collected.

Automated Reject Processing

The main features of an automated reject processing system include:

- Machine stripping of the reject.
- OCR reading of the original MICR line.
- Automated encoding of MICR data on the strip.
- Automated reentering of the MICR line information in the appropriate place in the captured data base.

Table 55 outlines the response to the survey questionnaire concerning the usage of automated reject processing equipment, with 18% of the respondents using only automated equipment and 54% (an increase of 12% from 1981) using automated equipment in combination with manual processing methods. Of the 28% of respondents not utilizing automated reject processing, 35% plan to acquire the capability, with an additional 39% still undecided.

In 69% of the respondent banks using automated equipment, reject processing is accomplished on-line. Of these same banks, only 13% stated that they repaired all fields in the MICR line; 21% responded that they did not repair all fields in the MICR line; 43% stated that they repaired all fields for selected banks; and 23% responded that they would repair all fields only if operator intervention is not required.

The percentage of banks that now employ automated reject processing systems continues to increase — from 61% to 72% in the last year. Federal Reserve pricing of rejects, as well as the need for productivity improvements, have been instrumental in the evolution.

Table 55

Automated Reject Processing

Use of Automated Processing	1980	1981	1982
No	37%	39%	28%
Yes, exclusively	18	19	18
Yes, in combination with manual methods	45	42	54
If no, do you plan to acquire automated reject processing?			
No	28%	11%	26%
Yes	36	44	35
Undecided	36	45	39
If yes, automated reject processing is:			
On-line	58%	63%	69%
Off-line	42	37	31
Do you repair all fields, including the account number?			
No	13%	16%	21%
Yes	15	12	13
Yes, on selected banks	44	40	43
Yes, but only if operator intervention is not required	28	32	23

The trend also continues for banks with automated reject processing equipment to process a greater percentage of items by these means rather than by manual methods. Table 56 shows that in 1982 the average number of items processed in this manner increased to 77.1% of total rejects, while the median rate jumped to 85.8%. The upper limit apparently has not been reached, since approximately 24% of the banks using this automated equipment report that they do not process any rejects by less productive manual operations (Table 57).

Miscellaneous Statistics

Table 58 presents data on the percentage of total incoming items that banks receive with the dollar amount encoding completed. As previous productivity tables indicate, the encoding function is labor intensive and its operation consumes a significant portion of the man-hours devoted to check processing. Federal Reserve pricing has caused the unbundling of prices for non-credit services so that an expansion of price incentives for encoded work is expected. This fact may explain the 12.0% increase in the percentage of encoded incoming items that occurred in the last year.

Table 59 shows the percentage of supervisory time compared to clerical man-hours. The combined average for the 10 productivity elements was 12.8% in 1982 and 12.1% in 1978.

The percentage of on-us items compared with the total number of items processed increased significantly to 47.7% in 1982; the figure had varied between 44.4-44.8% since 1978 (Table 60). The percentage of payable-through drafts compared with the total number of on-us items processed was 2.4% in 1982; this figure has varied between 3.8-6.7% since 1978 (Table 61).

Table 56

Percent of Automated Reject Processing by Area

Area	Automated Reject Processing+				Manual Reject Processing≠			
	1979	1980	1981	1982	1979	1980	1981	1982
Boston	82.8	74.1	69.9	81.5	17.2	25.9	30.1	18.5
New York	60.9	43.0	58.8	75.1	39.1	57.0	41.2	24.9
Philadelphia	64.5	53.9	64.5	64.6	35.5	46.1	35.5	35.4
Pittsburgh	91.7	69.4	100.0	59.8	8.3	30.6	0.0	40.2
Washington, D.C.	82.9	44.3	56.1	63.2	17.1	55.7	43.9	36.8
Atlanta	63.0	61.2	78.4	74.2	37.0	38.8	21.6	25.8
Chicago	59.1	39.5	61.6	74.9	40.9	60.5	38.4	25.1
Cleveland	38.7	67.1	71.3	70.4	61.3	32.9	28.7	29.6
Detroit	90.1	60.0	50.0	56.8	9.9	40.0	50.0	43.2
Minneapolis/St. Paul	*	*	58.8	78.7	*	*	41.2	21.3
St. Louis	69.9	62.4	56.9	69.1	30.1	37.6	43.1	30.9
Dallas	88.2	96.4	53.1	76.8	11.8	3.6	46.9	23.2
Houston	23.6	63.9	81.3	49.9	76.4	36.1	18.7	50.1
Los Angeles	84.9	82.6	84.8	77.6	15.1	17.4	15.2	22.4
San Francisco	69.0	59.7	67.6	52.8	31.0	40.3	32.4	47.2
Denver	53.9	47.8	51.4	89.3	46.1	52.2	48.6	10.7
Total banks	65	115	104	123	65	115	104	123
Average	66.3	68.6	70.1	77.1	33.7	31.4	29.9	22.9
Median	73.8	73.8	82.8	85.2	26.2	26.2	17.2	14.8

*No respondents.

$+\frac{Q97}{Q99} \times 100$; $\neq\frac{Q98}{Q99} \times 100$

Table 57

Distribution of the Automated Reject Processing Rate

Rate	Number of Banks 1979	1980	1981	1982
0% - 10%	6	25	22	23
10% - 20%	3	3	0	0
20% - 30%	0	6	4	0
30% - 40%	3	4	0	0
40% - 50%	3	2	7	7
50% - 60%	7	6	3	2
60% - 70%	5	8	5	8
70% - 80%	11	10	9	6
80% - 90%	11	10	11	24
90% - 100%	6	13	14	23
100%	10	28	29	30
Total banks	65	115	104	123
Average	66.3	68.6	70.1	77.1
Median	73.8	73.8	82.8	85.2

$$\frac{Q97}{Q99} \times 100$$

Table 58

Percent of Incoming Items Encoded

Area	ADL Banks 1979	1980	1981	1982	All Banks 1979	1980	1981	1982
Boston	73.5%	66.1%	68.9%	73.5%	48.1%	52.1%	55.8%	55.7
New York	55.8	53.5	56.7	48.5	48.2	51.8	48.2	50.6
Philadelphia	50.8	72.1	70.5	74.1	56.9	44.6	48.5	54.2
Pittsburgh	52.5	53.6	53.2	54.3	48.7	39.6	50.2	50.9
Washington, D.C.	43.5	30.3	39.4	48.8	43.9	43.8	47.5	51.9
Atlanta	67.8	56.5	73.6	68.4	54.5	51.1	55.8	54.6
Chicago	83.9	78.7	84.0	83.4	70.2	69.4	73.2	74.7
Cleveland	62.9	62.2	62.9	63.9	52.9	55.8	50.7	53.4
Detroit	60.0	57.1	56.7	66.4	40.1	43.4	38.0	43.0
Minneapolis/St. Paul	*	*	90.5	91.4	*	*	54.9	73.6
St. Louis	68.4	73.1	67.5	78.2	66.5	69.7	69.6	72.0
Dallas	82.4	83.8	88.1	87.8	71.1	76.8	71.0	71.6
Houston	86.8	88.7	87.4	89.9	62.3	69.2	59.7	74.1
Los Angeles	43.6	45.4	*	39.6	33.8	36.0	31.9	38.3
San Francisco	38.7	42.3	38.7	72.9	40.2	46.8	44.3	50.5
Denver	77.9	85.4	82.8	85.9	67.3	66.9	58.3	64.1
Total banks	30	36	33	38	152	170	157	170
Average	56.8	64.4	60.7	72.8	50.7	57.0	56.5	63.3

*No respondents.

$$\frac{Q1 + Q2}{Q9} \times 100$$

Table 59

Percent of Supervisory Time to Clerical Man-Hours

Task	Average Supervisory Time 1979	1980	1981	1982
Processing of exception items (Q48 ÷ Q47) X 100	12.4%	14.0%	14.4%	14.2%
Data control (Q50 ÷ Q49) X 100	16.7%	12.8%	12.2%	13.5%
Encoding (Q52 + Q56) ÷ (Q51 + Q55) X 100	6.3%	12.1%	8.9%	12.1%
Check receiving (Q54 ÷ Q53) X 100	*	11.6%	12.6%	14.1%
Reader/sorter (Q58 ÷ Q57) X 100	16.8%	15.2%	18.9%	22.8%
Cash letter make-up (Q60 ÷ Q59) X 100	13.0%	13.6%	13.9%	14.6%
Microfilm (Q62 ÷ Q61) X 100	10.0%	5.5%	10.8%	13.2%
Paying and filing (Q64 ÷ Q63) X 100	4.9%	8.2%	8.4%	9.7%
Bulk filing (Q66 ÷ Q65) X 100	*	10.8%	13.4%	14.3%
Return items (Q68 ÷ Q67) X 100	23.5%	12.8%	11.6%	11.3%
Total banks	151	158	106	134
Combined average	9.4%	11.7%	11.0%	12.8%

*No comparable data collected.

$$\frac{Q48 + Q50 + Q52 + Q54 + Q56 + Q58 + Q60 + Q62 + Q64 + Q66 + Q68}{Q47 + Q49 + Q51 + Q53 + Q55 + Q57 + Q59 + Q61 + Q63 + Q65 + Q67} \times 100$$

Table 60

Percent of On-Us Items

Area	ADL Banks 1979	1980	1981#	1982	All Banks 1979	1980	1981#	1982
Boston	22.8%	31.5%		24.4%	50.4%	46.6%		42.3%
New York	38.2	46.9		53.2	49.0	51.9		53.5
Philadelphia	53.2	29.6		33.1	51.3	51.1		48.3
Pittsburgh	50.0	50.5		59.5	60.8	58.2		62.0
Washington, D.C.	33.5	33.2		57.4	41.0	39.0		49.0
Atlanta	26.0	25.4		36.3	43.9	43.5		45.6
Chicago	25.7	27.6		24.1	28.9	29.5		27.2
Cleveland	43.2	48.7		51.1	43.4	47.1		49.1
Detroit	48.7	44.9		39.2	52.0	40.5		53.3
Minneapolis/St. Paul	*	*		24.4	*	*		26.9
St. Louis	14.2	15.6		11.5	22.5	23.5		23.1
Dallas	17.6	15.2		22.6	40.0	22.6		31.2
Houston	15.8	21.1		20.7	27.7	27.8		34.5
Los Angeles	31.2	74.0		17.5	57.6	67.5		52.3
San Francisco	61.2	64.3		63.9	48.4	58.9		65.4
Denver	28.3	37.0		31.0	36.1	44.0		41.1
Total banks	30	36		37	153	170		165
Average	33.8	39.9		42.1	44.5	44.4	44.6	47.7

*No respondents.

$$\frac{Q12 + Q13 + Q14 + Q15}{Q16} \times 100$$

#Data not available.

Table 61

Percent of Payable-Through Drafts

Area	ADL Banks 1979	1980	1981#	1982	All Banks 1979	1980	1981#	1982
Boston	4.1%	9.1%		2.0%	9.6%	8.5%		9.1%
New York	23.1	6.5		1.7	8.4	3.2		1.1
Philadelphia	23.1	2.9		3.0	1.6	1.7		1.1
Pittsburgh	0.4	0.5		0.4	0.2	0.3		0.3
Washington, D.C.	12.1	9.9		2.0	2.8	14.9		2.5
Atlanta	2.1	2.6		3.5	1.4	1.3		2.3
Chicago	9.8	12.4		9.2	5.8	7.2		5.5
Cleveland	1.3	1.0		0.7	2.1	1.6		9.7
Detroit	0.6	0.6		0.5	8.1	0.5		0.3
Minneapolis/St. Paul	*	*		15.9	*	*		8.2
St. Louis	6.5	5.5		8.8	6.3	5.3		14.3
Dallas	5.1	4.6		3.3	2.6	2.4		2.0
Houston	1.1	2.2		*	1.6	2.4		1.6
Los Angeles	1.3	20.5		4.1	0.9	2.6		1.4
San Francisco	1.0	2.1		0.6	19.0	2.4		0.7
Denver	6.7	4.9		3.1	7.6	4.8		8.1
Total banks	30	36		37	153	169		164
Average	3.3	8.6		1.8	3.8	5.2		2.4

*No respondents.

$$\frac{Q14}{Q12 + Q13 + Q14 + Q15} \times 100$$

#Data not available.

CHECK TRUNCATION

As commercial banks continue to search for more profitable and productive means of providing non-credit services, check truncation activities can be expected to gain wider acceptance. Since the banking industry appears on the threshold of dramatic movement in this direction, this survey continues the measurement of truncation trends. In order to remain consistent with the format outlined in the BAI manual, Check Truncation, five types of activities were measured:

- Truncation at the Bank of First Deposit — Truncation at the location of the first deposit of an item, such that payment information required by the bank's accounting system is transmitted by terminal entry, and check flow stops at that location.

- Check Safekeeping at Payor Bank — Truncation after high-speed processing by the payor bank, such that checks are not returned to that bank's customers, who receive payment information from descriptive statements and access their checks through efficient item retrieval and/or image processing functions.

- Cooperative Check Truncation — Truncation after high-speed processing by the bank of first deposit, such that payment is forwarded to the payor bank by electronic means, and check flow stops at the bank of first deposit.

- Electronic Check Presentment — Check flow is not truncated; however, payment information is transmitted by electronic means to the payor bank, where the checks are delivered at a later time.

- Data Processing Service Truncation — Item flow is truncated at the bank providing safekeeping and data processing services, particularly share drafts for NOW drafts, for other financial institutions.

With respect to the different forms of truncation activities as outlined here, none of the respondents reported pure truncation at the bank of first deposit. In Table 62, the weekly average number of items and the dollars representing those items are shown for the other categories.

For the banks reporting detailed data concerning check safekeeping at the payor bank, the weekly average number of items held for safekeeping by a bank was 129,365.1, and the weekly average dollar volume of those items was $63,563,367.40. This represents an increase in average item volume of 78.3% and an increase in average dollar volume of 18.3% over the 1981 data.

The banks participating in the National Association for Check Safekeeping's cooperative program reported a weekly average, per bank, of 225.8 items truncated, with a weekly average dollar volume of $53,810. An 82.8% increase from 1981 in the weekly average number of items truncated by a respondent bank was registered, as well as a 217.8%

Table 62

Forms of Check Truncation

Area	Truncation at the Bank of First Deposit 1981	1982	Check Safekeeping at Payor Bank 1981	1982	Cooperative Check Truncation 1982	1982	Electronic Check Presentment 1981	1982	Data Processing Services 1981	1982
Boston	0	0	0	1	0	1	0	1	*	0
New York	0	0	5	4	2	3	0	1	*	0
Philadelphia	0	0	5	5	0	0	0	1	*	1
Pittsburgh	0	0	1	1	0	0	1	2	*	0
Washington, D.C.	0	0	2	2	0	0	1	1	*	1
Atlanta	0	0	3	6	0	1	1	0	*	0
Chicago	0	0	3	4	1	2	2	3	*	0
Cleveland	0	0	1	3	0	1	0	1	*	0
Detroit	0	0	0	1	0	0	0	0	*	1
Minneapolis/St. Paul	0	0	3	1	0	0	0	0	*	0
St. Louis	0	0	2	0	0	1	0	0	*	0
Dallas	0	0	1	1	0	0	1	1	*	0
Houston	0	0	0	1	0	0	0	0	*	0
Los Angeles	0	0	2	3	1	1	0	0	*	0
San Francisco	0	0	2	3	0	0	1	1	*	0
Denver	0	0	2	2	0	0	0	0	*	2
Total banks	0	0	32	38	4	10	7	12		6
Total items (1982)			4,915,873		2,258		53,168		1,475,956	
Average (1982)			129,365.1		225.8		4,430.7		245,992.7	
Total banks (1982)	0	0	30		9		12		5	
Total dollars (1982)			$1,906,901,021		$484,289		$184,478,494		$ 61,109,149	
Average (1982)			63,563,367.4		53,810		15,373,207.8		12,221,829.8	
Total items (1981)			2,321,230		494		124,430		*	
Average (1981)			72,538.4		123.5		17,757.7		*	
Total banks (1981)	0		26		2		7		*	
Total dollars (1981)			$1,396,591,550		$33,859		$159,049,531		*	
Average (1981)			53,715,059.6		16,929.5		22,721,361.6		*	

*No comparable data collected.

increase in the average dollar volume from the previous year. The significant increase in the average dollar volume was caused by an increase in the maximum dollar value limitation for items eligible for truncation. The categories of items eligible for truncation were also expanded since the last survey.

The weekly average number of items processed through electronic check presentment was 4,430.7, while the weekly average dollar volume was $15,373,207.80 during the survey period. These figures represent significant decreases in both average item and dollar volume from 1981, which can be explained by the drop in interest rates. In 1981, the average check size for electronic presentment was $1,278.23 and $3,469.70 in 1982. It seems that presenting banks carefully adjusted the dollar limitations in this category to maximize the benefits of this service.

It was appropriate to add another category — data processing services — to the Institute's tracking of check truncation activity, since several major check processing banks provide safekeeping services for their institutional customers, such as credit unions, savings and loan associations, and others. Table 62 shows that the six reporting banks processed, on average, a weekly volume of 245,992.7 items, with a weekly dollar volume of $12,221,829.80.

REJECT PROCESSING COSTS

It is difficult to accurately state what it costs a bank to process a reject because each bank has its own set of internal accounting procedures. One bank might allocate a portion of the check processing department manager's salary to the cost of reject processing, while another might consider that cost trivial or irrelevant. It appears, however, that three major elements in the total cost of processing a reject can be analyzed — direct processing expense, non-repair expense, and float expense.

This year's survey gathered information on direct processing expense. In all, 102 respondents reported monthly expenditures for salaries, benefits, overtime, depreciation of equipment, leasing, equipment maintenance, supplies, terminal and telephone charges, and space rental. Table 63 shows the distribution of direct processing costs, with an average of 14.8 cents and a median of 9.0 cents. Some banks with higher costs have not fully depreciated the equipment expense of automated reject processing systems; other banks either do not have that equipment or have already written off the expense.

The banks that have invested in equipment that repairs rejects will not have to bear the expenses of a non-repairing bank. The non-repairing bank, in forwarding rejects and non-machinable items to a correspondent bank or the Federal Reserve, may be absorbing per-item charges and/or float charges. Float, the time value of the funds represented by rejected checks in the process of collection, has provided the rationale for major investment in reject processing and repair equipment. This survey did not calculate non-repair or reject float costs; however, it should be understood that these may be significant additions to a bank's total reject processing expense.

Table 63

Reject Processing Costs

Costs (Cents)	Number of Banks 1982
1 - 3	12
4 - 6	22
7 - 9	23
10 - 15	20
16 - 25	10
26 - 40	7
41 - 60	5
Over 61	3
	102
Average	14.8
Median	9.0

Q117
Q30 X 4

APPENDIX A
1982 SURVEY QUESTIONNAIRE

1982
Check Collection Performance Measurement Survey

Bank Administration Institute

INSTRUCTIONS

- Please report all data for the period beginning Monday, November 15, 1982, and ending Saturday, November 20, 1982. Place the appropriate date in the space provided at the top of each column in Section I.
- The Outstanding Exception Items, Section VIII, and the Comments, Section XIV, should be completed at the end of the survey period.
- Please report data pertaining to your domestic banking operations, including branches, if applicable.
- Since you may be unable to answer all questions, please respond with "N.A." if the question does not apply to your bank's operation, or with a "zero" where appropriate.
- Please read all definitions before completing the survey.
- Mail the completed survey booklet to:

  Constance Blecha
  Research Assistant
  Bank Administration Institute
  60 Gould Center
  Rolling Meadows, Illinois 60008

- If you have any questions, please call Ned Miltko, Principal Research Manager, at (312) 228-6200.

BANK ADMINISTRATION INSTITUTE

Check Collection Performance Measurement Survey

Date _____

Bank Name _____

Street Address _____

City _____ State _____ Zip _____

Name _____ Title _____
(of person to be contacted about survey date)

Address _____ Phone _____
(if different from above)

Name _____ Title _____
(of person to whom completed survey is to be returned, if different from above)

Number of DDA accounts in your bank. _____

Number of DDA accounts in other banks for which you are doing the processing. _____

DATA COLLECTION FORM

Please report all actual counts. Do *not* round off.

INCOMING WORK includes the check processing items received from the Federal Reserve, nonlocal banks, local banks and items included in all deposits made in your bank. Do *not* include the DDA items you process for other banks when you provide the accounting service on a fee basis. Do *not* include extra services performed over and above the check processing for lock box deposits, credit cards, preauthorized payments, account reconcilement, or wire transfer.

ITEMS consist of cashed and deposited checks, deposit tickets, control tickets, and other items that are normally processed commingled with checks on proof and/or encoding equipment. For batches use standard estimating techniques to determine item count.

I. INCOMING WORK

QUESTION	Question Relationship	Monday Date_____	Tuesday Date_____	Wednesday Date_____	Thursday Date_____	Friday Date_____	Saturday Date_____	WEEKLY TOTAL
1. Number of amount encoded items received from other banks and customers who do their own encoding sent to the reader/sorter.	—							1.
2. Number of amount encoded items received from other banks and customers who do their own encoding *not* sent to the reader/sorter.	—							2.
3. Number of items your bank encoded on single-pocket machines sent to the reader/sorter.	—							3.
4. Number of items your bank encoded on single-pocket machines *not* sent to the reader/sorter.	—							4.
5. Number of items your bank encoded on multipocket machines sent to the reader/sorter.	—							5.
6. Number of items your bank encoded on multipocket machines *not* sent to the reader/sorter.	—							6.
7. Number of first-pass items processed on the reader/sorter.	1+3+5=7							7.
8. Number of items that were *not* processed by the reader/sorter.	2+4+6=8							8.
9. Number of items received by your bank.	7+8=9							9.

Please report all actual counts. Do not round off.

OUTGOING WORK is the disposition of all items you received and processed today.

TRANSIT ITEMS are the items you processed both high speed and low speed that were "on-others."

TRANSIT HOLDOVERS—items received by your bank prior to a deadline but which were not processed by high-or-low-speed systems in time to be sent for collection at that deadline. These would result in a loss of float to the bank but not to its customer. Do not add today's holdover items to the next day's count.

ON-US ITEMS—those items drawn on your bank; includes all types of checking accounts, cashier checks, deposit tickets, and control tickets.

ON-US ITEMS HELD OVER—items received by your bank that were not processed in time to be posted to your accounts on the day they were received.

BULK FILE ITEMS—those items stored in bundles according to date paid within the statement cycle.

II. OUTGOING WORK

QUESTION	Question Relationship	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
10. Total number of transit items (on others) sent.	—							**10.**
11. Total number of transit holdover (on other) items.	—							**11.**
12. Total number of on-us items paid and filed (from previous day's incoming work).	—							**12.**
13. Total number of on-us items held over.	—							**13.**
14. Total number of payable-thru drafts processed.	—							**14.**
15. Total number of items bulk filed.	—							**15.**
16. Total number of items processed today.	10+11+12+13+14+15=16							**16.**
17. Total dollar value of items in No. 11.	—	$	$	$	$	$	$	$ **17.**

III. TRANSIT RETURNS

TRANSIT RETURN—items returned today for any reason that were originally sent out as transit items from this bank.

NOTE: Due to rounding, estimating, and so on, the weekly totals for questions 9 and 16 may not balance, but they should approximate each other.

QUESTION	Question Relationship	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
18. Total number of return items today.	—							**18.**
19. Total dollar value of items in No. 18.	—	$	$	$	$	$	$	$ **19.**

IV. ITEMS MICROFILMED

ITEMS MICROFILMED—total count of all check processing items filmed today.

Please report all actual counts. Do *not* round off.

QUESTION	Question Relationship	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
20. Total number of items filmed prior to reader/sorter processing.	—							20.
21. Total number of items filmed after reader/sorter processing.	—							21.
22. Total number of items filmed during reader/sorter processing.	—							22.
23. Total number of items microfilmed today.	20+21+22 =23							23.

V. REJECTS

REJECTS—are items rejected for any reason on the first pass through a MICR reader/sorter.

HIGH-SPEED REJECT REENTRY—is the recapture of items rejected for any reason on the first pass through a MICR reader/sorter by repassing the items.

QUESTION	Question Relationship	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
24. Total number because of transit number only.	—							24.
25. Total number because of account number only.	—							25.
26. Total number because of dollar amount only.	—							26.
27. Total number because of serial number only.	—							27.
28. Total number because of trancode only.	—							28.
29. Total number due to other reasons (unknown or multiple reasons).	—							29.
30. Total number of first-pass MICR rejects before high-speed reject reentry.	24+25+26 +27+28+29 =30							30.
31. Total number of first-pass MICR rejects remaining after high-speed reject reentry.	—							31.

32. Do you repair rejected items before high-speed reject reentry? (circle one) 1. No 2. Yes

EXCEPTION ITEMS—items or notification of items (such as debits, credits or inquiries) that may require reconcilement with other banks.

MISSENDS—items you missent or received from other banks that did not belong to you.

MISCODES (Encoding Errors)—dollar amount miscoded items you sent or received from other banks.

LISTING ERRORS (Incorrectly Charged)—items listed for an amount different from the written amount that you sent or received from other banks.

FREE—items received but not listed on incoming cash letters. (Enclosed not listed.)

LOST—items listed on the incoming cash letter but not received. (Listed not enclosed.)

Please report all actual counts. Do *not* round off.

VI. EXCEPTION ITEMS

QUESTION	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		WEEKLY TOTAL	
	Discovered	Resolved	Discovered	Resolved	Discovered	Resolved	Discovered	Resolved	Discovered	Resolved	Discovered	Resolved	Discovered	Resolved
33./34. Missends													**33.**	**34.**
35./36. Miscodes (Encoding Errors)													**35.**	**36.**
37./38. Listing Errors (Incorrectly Charged)													**37.**	**38.**
39./40. Free													**39.**	**40.**
41./42. Lost													**41.**	**42.**
43./44. Total exception items today 33+35+37+39+41=43 34+36+38+40+42=44	**43.**	**44.**	**43.**	**44.**	**43.**	**44**	**43.**	**44.**	**43.**	**44.**	**43.**	**44.**	**43.**	**44.**
45. Total dollar value of items in No. 43.	$		$		$		$		$		$		$ **45.**	
46. Total dollar value of items in No. 44.	$		$		$		$		$		$		$ **46.**	

LABOR MAN-HOURS—number of clerical and supervisory man-hours worked to complete each labor category listed. Separate estimated production from supervisory man-hours when appropriate for working supervisor. Include general force man-hours used in appropriate labor categories listed.

MAN-HOURS—productive hours, not time card hours, spent by department employees in completing the following tasks:

EXCEPTION ITEM MAN-HOURS—number of man-hours spent in discovering/resolving exception items for the calendar day.

PREPARATION MAN-HOURS—number of man-hours spent in receiving, batching, performing quality control, and preproving incoming deposits.

ENCODING OPERATOR MAN-HOURS—number of man-hours spent encoding the items received by your bank that were not encoded.

READER/SORTER OPERATOR MAN-HOURS—number of man-hours spent processing first pass items on the reader/sorter.

MICROFILM OPERATOR MAN-HOURS—number of man-hours spent microfilming the check processing items.

DATA CONTROL MAN-HOURS—consists of making MICR corrections or substitutions, preparing other entries for high-speed processing, controlling the movement of batches of items into and out of high-speed processing areas, balancing the transit and DDA entry runs, and preparing of daily settlement figures for departments involved in processing checks.

RETURN MAN-HOURS—number of man-hours spent in processing items returned to your bank that you had originally sent out as on-others items.

PAYING AND FILING MAN-HOURS—consists of processing "on-us" items, including the capture of MICR data preparing daily transaction files, updating customer master files, sorting paper documents, statement printing, management reports, verification of signature, date holds, stop payments, check filing, and statement rendering.

BULK FILING PRODUCTIVITY—number of man-hours spent in the capture of "on-us" MICR data, preparing daily transaction files, updating customer master files, cycle sorting daily on-us items for storage, retrieving and fine sorting cycle-to-date paper items, verifying stop payments, date holds and suspects, statement printing, and statement rendering.

CASH LETTER MAKE-UP MAN-HOURS—consists of processing outgoing ("on-others") items on computer and/or reader/ sorter equipment, including the printing of cash letters, the fine sorting of items by destination, and the assembly and dispatch of these items, including any manual processing of quick kills and reader/sorter rejects.

VII. LABOR MAN-HOURS

QUESTION	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		WEEKLY TOTAL	
	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory
47./48. Total number of nonofficer man-hours to process the exception items in Nos. 43 and 44.													**47.**	**48.**
49./50. Total data control man-hours to process the items in No. 9.													**49.**	**50.**
51./52. Total single-pocket encoding operator man-hours to process the items in Nos. 3 and 4.													**51.**	**52.**
53./54. Total preparation man-hours to process the items in No. 9.													**53.**	**54.**
55./56. Total multipocket encoding operator man-hours to process the items in Nos. 5 and 6.													**55.**	**56.**
57./58. Total reader/sorter man-hours to process the items in No. 7.													**57.**	**58.**
59./60. Total operator man-hours for cash letter makeup in Nos. 10 and 11.													**59.**	**60.**
61./62. Total microfilm operator man-hours to process the items in Nos. 20 and 21.													**61.**	**62.**

VII. LABOR MAN-HOURS (continued)

QUESTION	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		WEEKLY TOTAL	
	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory
63./64. Total paying and filing man-hours to process the items in Nos. 12, 13, and 14.													**63.**	**64.**
65./66. Total bulk filing man-hours to process the items in No. 15.													**65.**	**66.**
67./68. Total man-hours to process return items in No. 18.													**67.**	**68.**
69. All other nonofficer man-hours used in check processing not reported in Nos. 47 to 68.	Hours Description Hours Description Hours Description **69.** Total		Hours Description Hours Description Hours Description **69.** Total		Hours Description Hours Description Hours Description **69.** Total		Hours Description Hours Description Hours Description **69.** Total		Hours Description Hours Description Hours Description **69.** Total		Hours Description Hours Description Hours Description **69.** Total		**69.**	
									70. Total of questions 47 to 69				**70.** Grand Total	

PLEASE COMPLETE THE FOLLOWING AT THE END OF THE WEEK

VIII. OUTSTANDING EXCEPTION ITEMS

NOTE: In order to obtain an accurate description of total exception dollars, please report the summation of dollar value for all debit and credit items outstanding. For example, if there are only two items over six months outstanding to report, a debit for $100 and a credit for $100, enter $200 on line 76 and enter 2 on line 82. If this is not possible, complete this section with "NA."

Total of Debit and Credit Outstanding Transit Exception Items	Part of Total Exception Items (Debit and Credit) That Have Been Outstanding for:				
	1 Month or Less	1-2 Months	2-4 Months	4-6 Months	Over 6 Months
71. $ _____ Amount	72. $ _____ Amount	73. $ _____ Amount	74. $ _____ Amount	75. $ _____ Amount	76. $ _____ Amount
77. _____ Items	78. _____ Items	79. _____ Items	80. _____ Items	81. _____ Items	82. _____ Items

Note: 71=72+73+74+75+76
77=78+79+80+81+82

83. Generally, our bank would: (circle one)

Always balance before items leave the bank, even if it means missing a transit deadline. **1**

Attempt to balance before the items leave the bank, but will make a transit deadline even if balancing is incomplete. **2**

Very seldom balance before the items leave the bank to make a transit deadline. **3**

84. Our bank's experience over the last year indicates that exception items have: (circle one)

Why?

Grown **1** _____

Remained about the same **2** _____

Decreased **3** _____

85. The staff responsible for making adjustments and reconciliations over the last year has:

*Number of People**	1981	1982
Grown **1**	86.	87.
Remained about the same **2**		
Decreased **3**		

**Number of full-time equivalent people.*
Express part-time people as fractional of full-time people.

NOTE: The productivity figures reported in this section should have been reported in the appropriate categories of earlier sections of the survey. This section should be completed if your bank utilizes on-line reject reentry techniques.

ON-LINE REJECT REENTRY—processing of items rejected from all first pass and subsequent passes of the MICR reader/sorter, using CRT or other automated devices to merge reject data directly to the MICR capture system.

ON-LINE REJECT REENTRY MAN-HOURS—making MICR corrections/substitutions through CRT or other automated device, controlling the movement of batches of items into and out of the high-speed processing job stream, balancing the transit and DDA reports, both first and subsequent passes, and providing daily settlement figures for all appropriate departments.

IX. ON-LINE REJECT REENTRY

QUESTION	Question Relationship	Weekly Total
88. Total number of reject items reentered on-line from first passes.	—	**88.**
89. Total number of reject items reentered on-line from subsequent passes.	—	**89.**
90. Total number of reject items reentered.	88+89=90	**90.**
91. Total man-hours to reenter reject items in No. 90.	—	**91.**

92. Do you repair rejected items that are reentered on-line from first or subsequent passes? (circle one) 1. No 2. Yes

X. AUTOMATED REJECT PROCESSING

NOTE: The productivity figures reported in this section should have been reported in the appropriate categories of earlier sections of the survey. This section should be completed if your bank utilizes a system of automated processing of reject items.

AUTOMATED REJECT PROCESSING—processing of all nonmachinable items, including items rejected by the MICR reader/sorter, on *both first pass and subsequent passes*, using automated equipment for repair and data capture.

AUTOMATED REJECT PROCESSING MAN-HOURS—preparing reject items for processing (including attaching strips), processing the rejects, and balancing output.

93. Is your bank using automated reject processing? (circle one)

1. No **2.** Yes, exclusively **3.** Yes, in combination with manual methods

94. If not, does your bank plan to acquire automated reject processing capability? (circle one)

1. No **2.** Yes **3.** Undecided

95. If your bank uses automated reject processing, is it accomplished? (circle one)

1. On-line? **2.** Off-line?

96. If your bank uses automated reject processing, do you repair all fields, including account number? (circle one)

1. No **2.** Yes **3.** Yes, on selected banks **4.** Yes, but only if operator intervention is not required.

QUESTION	Question Relationship	Weekly Total
97. Total number of all rejects processed through automated reject systems.	—	**97.**
98. Total number of all rejects processed through manual reject systems.	—	**98.**
99. Total number of MICR rejects processed.	97+98=99	**99.**
100. Total man-hours used to process reject items in No. 99.	—	**100.**

TRUNCATION AT THE BANK OF FIRST DEPOSIT—check flow is truncated at the location of first deposit, since payment information is transmitted by terminal entry to the bank's accounting system.

CHECK SAFEKEEPING AT PAYOR BANK—check flow is truncated after high-speed processing by the payor bank. Checks are not returned to customers, although check payment information is contained in a descriptive statement. Efficient item retrieval and image processing functions allow customer access to these items.

COOPERATIVE CHECK TRUNCATION—check flow is truncated after high-speed processing by the bank of first deposit. Payment information is forwarded to the payor bank by alternative means; for example, through the ACH (Participants in the National Association for Check Safekeeping would report activity under this category.)

ELECTRONIC CHECK PRESENTMENT—check flow is not truncated, however, payment information is transmitted by electronic means to the payor bank, where checks are delivered later.

DATA PROCESSING SERVICE TRUNCATION—item flow is truncated at the bank providing safekeeping and data processing services, particularly share drafts or NOW drafts, for other financial institutions.

XI. CHECK TRUNCATION

QUESTION	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
101. Total number of on-us items truncated at the location of first deposit.							101.
102. Total number of on-us items for safekeeping at payor bank.							102.
103. Total number of transit items (on others) truncated in cooperative program.							103.
104. Total number of transit items (on others) transmitted for electronic check presentment.							104.
105. Total number of items (on-others) truncated as a part of data processing services provided.							105.
106. Total dollar value of items in No. 101.							106.
107. Total dollar value of items in No. 102.							107.
108. Total dollar value of items in No. 103.							108.
109. Total dollar value of items in No. 104.							109.
110. Total dollar value of items in No. 105.							110.

XII. ANALYSIS OF FLOAT REPORTING

The purpose of this research is to discover how commercial banks are currently managing and reporting float. It is not BAI's intention that commercial banks use the results of this study to assign specific target figures or float levels. Comparative float statistics are often not valid, since the business plan of each bank calls for creating a unique float policy. BAI expects to find that banks with considerable corporate business have higher float levels than banks with more retail business, although competitive circumstances may affect the situation also.

NOTE: Please report daily average dollars experienced during October, 1982.

111. What is the cutoff time that is used by your check processing operations center such that all items received for processing after this time will be posted with the date of the next business day?

_____ A.M. _____ P.M.

112. How often do you experience major dollar exceptions to this cutoff time? (late branches, lockbox, drafts, etc.) Circle the appropriate number and fill in the dollar amount on the line provided.

1. Frequently (one or more times per week) $_____ **2.** Seldom (two-three times per month) $_____ **3.** Never

113. Do you track float by major customer segments (corporate, retail, correspondent bank, etc.)?

1. No **2.** Yes

If yes, please list your classifications and their relative percentages of total bank float.

_____ _____%
_____ _____%
_____ _____%
_____ _____%
_____ _____%

114. Do you allocate float by functional source or application (DDA, savings, commercial loan, etc.)?

1. No **2.** Yes

If yes, please list your classifications and their relative percentages of total bank float.

_____ _____%
_____ _____%
_____ _____%
_____ _____%
_____ _____%

115. Do you compute a float factor or average collection time for the bank?

1. No 2. Yes

If yes, please answer the following questions:

1. What is the value of the figure you are using (expressed in business days)? _____
2. How is it used (to allocate customer float, reporting, etc.)? _____
3. How often is the factor updated? _____
4. Describe how the factor is calculated. _____

116. Please list the following average dollar statistics for October, 1982:

NOTE: The limitations of your accounting system may allow you to answer only question 2. If you proceed further, your totals for questions 3-8 should equal your total for question 2.

1. Cash and due from banks $_____
2. Total (all deferred accounts) $_____
3. Due from banks deferred $_____
4. Due from foreign banks deferred $_____
5. Federal Reserve deferred $_____
6. Due from affiliates deferred $_____
7. Internal deferred $_____
8. Other deferred $_____

Total $_____

XIII. REJECT PROCESSING COSTS

NOTE: Information in this section is requested to update past BAI research concerning the costs of processing rejected items. Gathering these data may not be easy; however, with the assistance of your cost accounting staff, BAI hopes to discover the current costs associated with reject processing. If you are charging, being charged, or absorbing these costs, an industry average may prove useful.

117. Please report actual dollars experienced during October, 1982, for the following areas. Use the man-hour figures reported in previous sections as a guide in computing salary/benefit dollars for personnel, including supervisors who perform multiple daily functions.

1. Salaries/benefits (clerical and supervisory) $_____
2. Overtime $_____
3. Depreciation of equipment $_____
4. Leasing of equipment $_____
5. Maintenance $_____
6. Supplies $_____
7. Terminal charges $_____
8. Telephone $_____
9. Space rental (reject processing area only) $_____

Total $_____

XIV. COMMENTS

NOTE: The results of past BAI Check Collection Surveys have contained appendices devoted to commentary from the nation's check processing professionals. Please provide your comments so that this valuable forum can continue. How have conditions changed from last year? Attach a separate sheet if you need more space.

Personnel (Training and Turnover)

Transporation

Rejects (Rates and Handling)

Outstanding Exception Items

Returns and Adjustments

(over)

Automated Reject Processing

Equipment and Systems Problems

Security

Regulatory Impacts

Check Truncation (Safekeeping and Non-return)

Microcomputer Applications

Miscellaneous

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APPENDIX B

BANKER COMMENTS

The following comments were submitted by bankers who participated in the 1982 BAI Survey. The purpose of this section is to provide bankers with an overview of the current environment in check processing operations. Therefore, references to specific organizations, vendors, or equipment were omitted; however, comments concerning working relationships with Federal Reserve Banks and other financial institutions are pertinent to the overall functioning of the check collection system and have been included to promote the cooperative efforts for improvement by all participants.

Personnel

"There has been an increase of interest in in-bank seminars. The quality circle concept has been incorporated to increase productivity. We have developed sound/slide presentations for training in proof, data preparation, sorter operations, and float control. Our intradepartmental training program is in place."

"Extensive cross-training is used in the individual areas of item processing to provide job enrichment and flexibility. Turnover has been drastically reduced due to better salaries, cross-training, better working conditions and hours, more selective hiring, and economic conditions."

"Proof has been centralized and the staffing mix is predominantly part-time, necessitating the additional training of 30 people. Acoustic partitions have been added around proof machines to enhance the decor of the area, reduce noise and distractions, and to instill pride and productivity in the work force."

"We currently use an in-house training facility for new proof clerks in our check processing area. We plan to expand the training to include all functions within the area."

"Turnover is down. The result of turnover being down is that jobs are being done more efficiently by experienced people. This situation has resulted in more extensive cross-training during out-of-work time."

"The training area has concentrated on specific job training for the check processing operation, meaning that new employee, basic and advanced training requirements have been established for each job. Cross-training of tasks that are included in several different jobs, such as signature verification, has been a priority this year."

"We have seen a decrease in our turnover rate from 1981 which we attribute to incentive programs that have been implemented and better training programs, although we realize that at least during the last half of the year the economy has helped our turnover rate. Thorough training programs are a

must in check processing for quality control and reducing turnover. We also believe in incentive programs and believe it provides motivation and a higher quality of work produced."

Transportation

"We have gone back to providing our own transportation after using a courier service. The cost of the courier service exceeded the cost of owning our own cars and providing for their maintenance."

"The transportation problems encountered last year in the aftermath of the air controllers' strike have diminished; we have adjusted to the revised schedules and become more creative when developing and planning for transit dispatches. We need to review our internal transportation to gain economies in relation to our statewide branch delivery network."

"Both incoming and outgoing courier costs continue to rise. With the advantages of direct sends, we are considering charter flights for outgoing cash letters if the availability warrants. This will increase costs, but we hope to recover on the float gains."

"Due to the uncertainty of airline schedules and the diminished service levels, charter air service has become more economically feasible."

Rejects

"Most rejects seem to be caused by poor quality checks from printers for certain corporate customers, who apparently try to save money by purchasing cheap checks. They should be charged a monthly penalty fee to compensate for the extra cost of processing these rejects."

"Reject rates have decreased from 4% to 1.5% during the past year due to a change in high-speed sorting equipment."

"The increase in Fed processing costs for rejects has prompted our bank to seek alternative means of clearing rejected items, i.e., correspondent banks. In addition, reject volume is lower due to better quality control."

"Our in-house quality control is helping us to maintain a lower percentage of rejects."

"With processing centers utilizing reject repair strips, but not fully encoding MICR readable data, the reject rates due to missing account numbers and auxiliary on-us fields have increased."

"A reject rate of 1.7% should be acceptable but will continue to cause problems with increases in volume. Quality personnel must have a thorough knowledge of check processing and must be well motivated to keep these items moving through the collection system properly. We would full-field encode all rejects, including the account number, without operator intervention if it were the standard rather than the exception."

Outstanding Exception Items

"It appears that all banks are putting more emphasis on resolving outstanding shortages of all amounts."

"In conjunction with our first half increase in adjustments, the outstandings increased accordingly. This trend is especially true during vacations when volumes increase. As the full staff complement returns in the fall, the outstandings decrease. Because of volume decreases in the third quarter, our staff has been successful in reducing outstandings."

"Due to increased experience as a result of lower turnover, internally generated exception items are declining. We are experiencing increasing difficulties in resolving exception items through the Federal Reserve System."

"Response time on inquiries has not shown any appreciable improvement."

"Errors in customer deposits have continued to increase which accounts for a large portion of the missing and lost item category in this year's survey. We have also noticed a number of Federal Reserve missing and lost item adjustments which exceed the Fed's policy of initiating adjustments no later than five days after the receipt of a cash letter by the drawee bank. In some instances, these adjustments occurred months later which severely hampered our attempts to collect on photocopies."

"Clearing exceptions has been expedited due to greater emphasis put on them in the research area."

"Our outstanding items are at the lowest levels ever. Our overall resolution time has also decreased significantly."

"The adjustment department has difficulty keeping up with all the necessary adjustments due to lack of staff. An on-line adjustment system would alleviate this problem."

Returns and Adjustments

"Some of the larger banks are charging a fee of $20 - $25 to pay for a photocopy of a lost check. The industry is long overdue for mandatory wiring on large return items and speeding up the movement of returns. Large losses have resulted from slow and non-wired returns."

"We continue to receive incomplete or incorrect information on adjusting entries."

"One problem that we have is the condition of return items. It would be desirable if the other banks would stop punching holes in the MICR line and begin using stamps instead of stapled paper to advise of the reason for return. Our automated return item system reads the MICR line."

"Photocopies processed as cash items continue to be a major concern for us. We continue to find a large percentage of these photocopies already paid, and the difference is held by another processing bank."

"As returns costs continue to escalate, there are no real technological solutions available at this time."

"Return item volume has increased. Adjustment departments were still able to reduce their staff because of better reference materials for research."

"We have experienced difficulty with the savings and loan industry in dealing with return items."

"A Federal Reserve retention schedule of one year on return items is too short. This produces an inability, in a significant number of items, to obtain pertinent information relevant to the resolution of the investigation. The Fed can charge us without information but we can't charge them until we obtain the information."

"Increased attention is being given by all banks to incoming returns. Late returns are becoming more prevalent, as timeliness is being monitored more closely than in the past."

"After years of advancement in the presentation of checks, nothing much has been done for the prompt return of these items. We would like to see the industry take a more firm stand in standardizing endorsements."

"Adjustment volumes have begun to stabilize. Information on adjustments has generally improved."

"Return items have more than doubled this year mainly due to the economy and NSF checks. Adjustments have also grown due to our bank's growth in the past year. Large companies are starting to do their own encoding which is causing problems."

Automated Reject Processing

"We installed on-line automated reject processing equipment this year, which has effectively reduced uncollected funds and Fed charges for low-speed items. These low-speed items, although corrected for faster processing, are still a problem for the paying bank. This problem could be resolved if standards for reject repair were established."

"We have been reentering rejects on-line for 18 months. It represents a dramatic improvement over add listing and reject correction through CRTs; it has allowed us to lengthen the proof window on heavy volume nights, thereby reducing floor holdover. The post-reader/sorter balancing process closes out 45 minutes to one hour after reader/sorter capture. This has reduced turnover on the second shift."

"Due to the implementation of automated reject processing, one and one-half staff positions have been eliminated without affecting the volume of items processed."

Equipment and Systems Problems

"We have installed programs to give us multiple, variable prime pass sorting capability. We are in the process of rewriting our communication programs to allow automated availability posting."

"We have excellent field engineering, resulting in very little hardware downtime. The software system that we converted in 1981 has stabilized and is relatively trouble-free."

"We experienced 80% availability of systems/equipment (high-speed sorters), including preventive maintenance as unavailable."

"Sorter and computer operations tape problems have been prevalent and damaging."

"We have very few equipment problems, but do require considerable systems resources to maintain our computer operating system. All applications and all new products, both retail and commercial, flow through our operating system, making it important that the system be efficient. However, with all the new product work today, we can't get resources to work on fine-tuning the operating system."

Security

"Our concern for physical security of employees, equipment, and buildings has caused us to purchase one of the most sophisticated surveillance and monitoring systems available, plus using 24-hour, armed security guards. Also, employee access is restricted in some areas."

"Security has improved by regulating the use of on-line passwords and installing systems that control terminal use. Special procedures have been defined for security measures."

"Check processing operations is located in a secured building with various levels of security applied in individual areas. We have locked and fire-proofed microfilm storage, courier windows, limited access areas, and so on."

"We have been taking a more aggressive stance in prosecuting both internal and external fraud cases."

"Our computer operation area installed a new security system which requires all employees of that area to use an individual radio transmitter to gain entrance to the operational area. All other personnel without the transmitter are prohibited from entering."

"Security was improved at the processing center with the installation of cameras at the entrances."

Regulatory Impacts

"Financial institutions should be given more time between receipt of finalized regulations and implementation date of the change. It is very difficult to develop a new product in such a limited time frame."

"We continue to be impacted by proposed changes brought about by noon presentment, new Federal Reserve prices and availability schedules, and proposals to charge back float to the bank. We are continually reviewing all sending arrangements and sort patterns in an effort to determine the optimum mix between availability gains and associated processing and clearing costs."

"The impact of the increased cost associated with clearing items through the Federal Reserve System has been tremendous. Deterioration of our correspondent base has occurred, while the Federal Reserve has become more competitive. More direct sends have been implemented."

"The new Federal Reserve policies regarding float and per item pricing have resulted in increased analysis of our internal policies. Systems changes will be necessary to respond adequately."

"The impact of the Fed's pricing services has necessitated expansion of correspondent bank sendings nationwide in addition to increased sealed package sendings within our district."

Check Truncation

"We have started safekeeping and non-return on major accounts — projected 1983 volume should exceed 20 million items."

"We are at the edge of check safekeeping in that we have begun to provide storage for one of our corporate accounts. We are anticipating that there will be many more requests in the future."

"Currently, some branches are involved with non-returns, with approximately 65,000 accounts participating in a pilot mode."

"We do not plan the initiation of any kind of check truncation system in the future. We do plan to convert to bulk filing and cycle sort."

"We have just begun a check safekeeping pilot program with employees. Results are not yet measurable."

"We still anticipate doing retail non-return, especially with the introduction of super NOWs. We participate on NACS committees, but we see safekeeping gaining acceptance very slowly since it is exception processing at current low volumes."

"Participation in NACS as a keeping bank has been uneventful. No major difficulties or problems have been encountered. Considerable problems have been encountered with receiving information and photos from other keeper banks in a timely manner."

"We are implementing a pricing structure to encourage truncation."

"We are ready, but our market and upper-level management are not allowing us to convert."

"A project was begun on retail check safekeeping in 1982. It was not implemented due to lack of customer support."

Microcomputer Applications

"Microcomputer usage for volume and performance measures has been initiated for encoding, preparation, reader/sorter, return item, and exception item processing areas. Additional departments are scheduled for 1983."

"We have justified microcomputers for settlement, float management, and productivity reporting."

"We have purchased a check collection model and plan to see if it can be used on a microcomputer rather than by an outside time-sharing vendor."

"Our new word processing system has produced a vehicle for more effective management reporting. In addition, it has enhanced the ability to track more closely the receipt and dispatch of cash letters."

"We are currently tracking proof operator performance statistics for incentive pay, as well as work receipt time and volume. We will add some other operating statistics this year."

"Our bank is now using microcomputers for various check collection applications, including volume projections, transit analysis, cost studies, productivity, and due-from forecasting."

Miscellaneous

"With the inception of bulk filing and non-return, we must be able to retrieve a microfilm copy of an item in a timely fashion. Many hours are spent ensuring the quality of reader/sorter microfilm, answering inquiries, and producing photocopies for bulk file and non-return items."

"While check processing and collection is continuously changing due to technology, regulations, and labor markets, it remains a challenging and rewarding field. It should always be viewed as a vital contributor to bank profitability.

"There is a need for an operational directory for major institutions, listing both telephone contacts and addresses for writing to resolve problems."

"Item processing remains so costly that planning and control are essential. Cost containment or reduction are impossible if item processing management is not part of the bank's leading edge. The challenge of the information era that we are entering is to improve the quality of item processing and to improve the quality of information reported, while containing costs. Planning is the key."